InfoChannel®
CONTENT MANAGER

InfoChannel
Content Manager 5
User's Guide

SCALA®
broadcast multimedia

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Maintenance of facilities external to the Software; hardware support; questions regarding hardware installation, support or maintenance, telecommunications systems.

Repair or damage resulting from malfunction of electrical power or heating, ventilation and air conditioning; water damage; fire damage; theft; integration of the Software with non-compatible systems or software; misuse or improper use of the Software (including without limitation any use not specifically authorized in the Software license agreement, documentation or manuals); vandalism; civil commotion or war; or any combination thereof.

Support or Maintenance Services for altered or modified Software other than that altered or modified by Scala and/or authorized agents of Scala; or support versions of Software that have been superseded by a new release (provided that Scala will continue to support superseded versions for a reasonable period, not to exceed forty-five (45) days, sufficient for Customer to implement the newest version).

Supervision of repairs on associated equipment.

Telephone support of the end user is not part of the Scala Advantage Basic Program, but is included in the Scala Advantage Plus Program. For Scala Advantage Basic customers, support may be provided by the SCP. Per incident support is available directly from Scala for a per incident fee. Please see current pricelist for pricing information.

Services including programming, graphic design, media encoding, training, etc. are not part of the Scala Advantage Basic or Scala Advantage Plus Agreements.

8. Customer Responsibilities

A. Scala Advantage Basic and Plus Customer Responsibilities

The Customer must have a valid license to use the Software from Scala and be in material compliance with the terms and conditions of such license.

The Customer must be current in its payment obligations under this Agreement.

The Customer shall be responsible for security of its confidential, proprietary and classified information as well as for the maintenance of adequate backup procedures for files, as Scala will not be responsible for loss of or altered files, data or programs.

The Customer agrees to provide a safe and secure installation environment which meets the specified requirements of the computer system(s) on which the Software is running, including without limitation environmental controls, electric supply, service clearances, cable runs and, in the event that the Support Organization agrees to send personnel to the Customer's premises, safety of the Customer's and the Support Organization's personnel.

The Customer agrees to limit use of the Software Maintenance Services that are the subject of this Agreement to occasions when the Software fails to work as set forth in the user manuals or occasions where the user manuals are unclear.

B. Scala Advantage Plus Additional Customer Responsibilities

The Customer shall notify the Support Organization of any Software problem together with complete information concerning the failure, as soon as possible after the problem has occurred.

The Customer shall provide as accurate and complete a description as possible to the Support Organization. The Customer shall assist in problem resolution by providing copies of reports and/or files deemed necessary by the Support Organization.

The Customer will provide the Support Organization with the following:

- Name of nominated personnel (and their location) who are competent to use the Software;
- Access to the Software and computer(s) on which it resides;
- Adequate working facilities (such as communication devices/modems); and
- Access to and use of all information reasonably necessary to service the Software.

9. Service Charges

InfoChannel Designer and InfoChannel Content Manager, and all other InfoChannel products except for InfoChannel Players and InfoChannel EX Modules, are sold with one year of Scala Advantage Basic coverage included in the price of the product, which will entitle the Customer to updates and bug fixes. A given network has a single network-wide Scala Advantage expiry date equal to that of the InfoChannel Content Manager. InfoChannel Players will include complimentary Scala Advantage coverage through the term of the InfoChannel Content Manager up to one year. Therefore the Scala Advantage coverage for InfoChannel Players and InfoChannel EX Modules will expire on the first anniversary date of the commencement date of the associated InfoChannel Content Manager after the InfoChannel Player purchase, regardless of the purchase date of the InfoChannel Player of InfoChannel EX Module. Upon renewal of the Scala Advantage program beyond the first anniversary of the commencement date of the InfoChannel Content Manager, Scala Advantage coverage will be charged for each InfoChannel Player, InfoChannel EX Module, and InfoChannel Content Manager. All products in the network must maintain the same expiry date. InfoChannel Designer is not considered part of the network and may have a unique Scala Advantage expiry date. For major product updates, Customer may be required to purchase additional months of support.

Thereafter, Customer may elect to renew Maintenance Services for additional annual periods at Scala's then-current standard annual fee for Maintenance Services. Annual fees may be invoiced thirty (30) days prior to the expiration of the previous period.

On-site service shall be provided at the reasonable discretion of the Support Organization. If on-site service is designated by Scala as required or Customer requested of which the Software is located at a distance beyond fifty (50) miles from the Support Organization's office, a travel charge may be assessed by the Support Organization upon notice to and approval of Customer.

For Scala Advantage Basic Customers, per incident support is available directly from Scala for a per incident fee. Please see current pricelist for pricing information. Support may be provided by the SCP.

10. Changes or Waivers to Software Maintenance and Support Agreement

During the term of the Agreement no changes and/or waivers by either party of its rights shall be made to the term and conditions contained herein other than by variation agreed to by authorized representatives of both parties and set forth in a writing duly executed by the parties. The non-enforcement or waiver of any provision of this Agreement on any occasion shall not constitute a waiver of such provision on any other occasions unless expressly so agreed in writing. It is agreed that no use of trade or other regular practice or method of dealing between the parties hereto shall be used to modify, interpret, supplement, or alter in any manner the terms of the Agreement.

Scala has the right to vary the charges made hereunder if the Customer wishes to extend the service hours beyond normal working hours referred to in Section 5.

If both parties agree in writing, additional Software to be supported may be included on this Agreement at a later date. The initial maintenance fee for the cost of supporting the additional Software will be prorated from the new Commencement Date to the original Initial Period or Renewal Term end date. An addendum form will be used to convey the additional Software to be included under this Agreement. The addendum form will be referred to as the "Addendum Page".

11. Non-Payment

The Support Organization reserves the right to decline to provide Software Maintenance if any amounts invoiced by the Support Organization have not been paid by the Customer as set forth in the Customers' approved credit terms.

12. Extraordinary Expenses

The Support Organization reserves the right to charge for unusual or excessive telephone, shipping, handling, media or user manual expenses in connection with the Software Support to be provided hereunder. In all cases, the Support Organization will notify the Customer of these costs in advance.

13. Assignment

Customer may not assign this Agreement to a third party without the prior written consent of Scala, which consent may be withheld in Scala's sole discretion, and any purported assignment without Scala's consent shall be void. Any merger, consolidation, spin-off, acquisition of or change-in-control involving Customer will be deemed an assignment. Scala may assign or delegate its rights and responsibilities hereunder to a third party Support Organization upon notice to Customer, and may freely assign its rights and obligations hereunder in connection with the merger, acquisition or sale of all or substantially all of the assets of Scala.

14. Force Majeure

Scala shall not be responsible or liable for failure to perform or observe, or for delay in performing or observing any obligation under this Agreement where such failure or delay arises from any cause beyond the control of Scala or the Support Organization (as applicable), including, but not limited to, strikes, lockouts, industrial action, acts of God, insurrection, terrorism, civil commotion, or any other cause beyond the reasonable control of Scala or the Support Organization (as applicable).

15. Limited Warranty

Scala shall perform its services hereunder in a workmanlike manner. In the event that it is established to Scala's satisfaction that any Software Maintenance or other service carried out by Scala or a third party Support Organization under this Agreement was defective, Customer's sole remedy shall be the re-performance of such services without cost to the Customer. Notwithstanding the functionality or performance of any addition or release of error corrections, enhancements, or new releases to the Software program(s) in connection with the Maintenance Services, Scala's obligation to correct errors in such additional releases shall be limited to the maintenance terms of this Agreement. EXCEPT AS EXPRESSLY SET FORTH IN THIS PARAGRAPH, SCALA SHALL HAVE NO LIABILITY FOR THE SOFTWARE OR ANY SERVICES PROVIDED, INCLUDING ANY LIABILITY FOR NEGLIGENCE; SCALA MAKES AND CUSTOMER RECEIVES NO WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, EXCEPT AS EXPLICITLY SET FORTH IN THIS AGREEMENT. SCALA SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

16. Limitation of Liability

Laws from time to time in force in the jurisdiction where any services are to be performed hereunder may imply warranties or liabilities which cannot be excluded or which can only be excluded to a limited extent. In which case, Scala hereby limits its liability to the extent permitted by law. If Scala cannot exclude or limit any warranty implied by law, this Agreement shall be read and construed subject to such statutory provisions. SCALA'S MAXIMUM LIABILITY TO CUSTOMER HEREUNDER SHALL BE LIMITED TO THE AMOUNTS ACTUALLY PAID BY CUSTOMER FOR THE MAINTENANCE SERVICES. SUBJECT TO THIS CLAUSE UNDER NO CIRCUMSTANCES WILL SCALA OR ITS RELATED PERSONS BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, SPECIAL, PUNITIVE, OR INCIDENTAL DAMAGES, WHETHER FORESEEABLE OR UNFORESEEABLE, BASED ON CLAIMS OF CUSTOMER OR ITS CUSTOMERS, INCLUDING, BUT NOT LIMITED TO, CLAIMS FOR LOSS OF DATA, GOODWILL, PROFITS, USE OF MONEY OR USE OF THE SOFTWARE, INTERRUPTION IN USE OR AVAILABILITY OF DATA, STOPPAGE OF OTHER WORK OR IMPAIRMENT OF OTHER ASSETS, ARISING OUT OF BREACH OF EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, MISREPRESENTATION, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, EXCEPT ONLY IN THE CASE OF PERSONAL INJURY WHERE AND TO THE EXTENT THAT APPLICABLE LAW PROHIBITS EXCLUSION OF SUCH LIABILITY. IN NO EVENT WILL THE AGGREGATE LIABILITY WHICH SCALA AND ITS RELATED PERSONS MAY INCUR IN ANY ACTION OR PROCEEDING ARISING OUT

OF PERFORMANCE OR NON PERFORMANCE OF THIS AGREEMENT EXCEED THE TOTAL AMOUNT ACTUALLY PAID TO SCALA BY CUSTOMER FOR THE SPECIFIC PRODUCT OR SERVICE THAT DIRECTLY CAUSED THE DAMAGE.

17. Applicable Law

This Agreement shall be governed and construed in accordance with the laws of the Commonwealth of Pennsylvania, without regard to its conflict of laws provisions.

18. Entire Agreement

This Agreement constitutes the entire agreement between the parties in respect of the Maintenance Services and supersedes all proposals or prior agreements, whether oral or written, and all other communications between the parties relating to the subject matter hereof.

19. Notices

Any notice permitted or required under this Agreement shall be deemed given if in writing and personally served or sent by pre-paid registered or certified air mail, or by confirmed telex or facsimile, addressed (or as either Party may direct otherwise in writing) to the parties at the addresses provided during the Software registration process, marked for the attention of the Managing Director (in the event the Customer is a company).

Any notice given in accordance with this clause shall be deemed to be received by and served upon the other party on the date such airmail letter would in the ordinary course of post have reached such address or on the date such notice is served or left at the relevant address (as appropriate) and in the case of telex or facsimile shall be deemed to have been served on the day following the date of successful transmission.

20. Severability

If any term, provision, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, it shall be severed here from and the remaining provisions of this Agreement will remain in full force and effect and will not be affected, impaired or invalidated.

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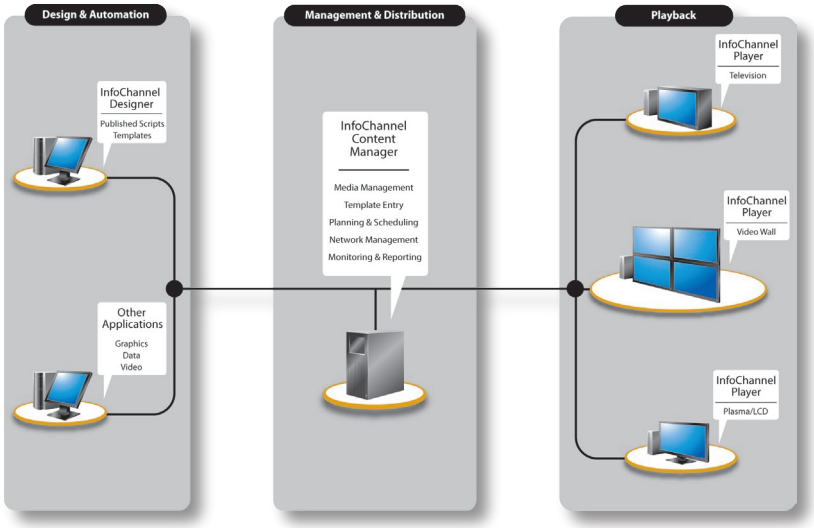
1 InfoChannel Content Manager 5
Introduction: Installation and Configuration

Scala InfoChannel Content Manager 5 is a breakthrough in media broadcast distribution, scheduling and management. Utilizing an intuitive, user-friendly interface, your Scala scripts and media will be effectively organized, scheduled, delivered and updated. Additionally, your networks and players will be fully managed and monitored, thereby keeping your media messages up and running with ease.



This guide has been developed to help you set-up your network, channels and players, and quickly start scheduling playlists. Before proceeding to use InfoChannel Content Manager, please take a few moments to familiarize yourself with the manual contents to ensure your configuration is complete.

Once you have followed the installation instructions in the quick start guide, the configuration of Scala InfoChannel Content Manager is a simple process. Determining your exact

configuration prior to using the quick start guide is essential for optimum results. Please read through the quick start guide ***BEFORE*** you install the software. By doing so, you will have a thorough understanding of the options which can be selected, and the settings and configurations you can choose as you install.

Glossary of Terms Introduced in this section:

InfoChannel Designer 5 – This is the creation software.

InfoChannel Player 5 – Playback software.

Plan – This includes instructions which are created by Content Manager, so players know what to do when.

Content Manager Direct – A type of delivery option which is specified within InfoChannel Content Manager and the InfoChannel Player.

Player-Direct FTP – A type of delivery option which is specified within InfoChannel Content Manager and the InfoChannel Player. InfoChannel Player software comes with a built in FTP server, specifically for this purpose.

Publish Location – An FTP or shared folder which both Designer and Content Manager can access.

Before You Install: Checklist of Hardware System Requirements

Hopefully, you're reading this before you've attempted to install InfoChannel Content Manager on your computer. We've listed some minimum requirements for you to consider, to ensure the optimum performance from your configuration.

Please carefully review the checklist below to make sure your system meets the minimum requirements. Failure to properly

follow the installation and configuration instructions may cause problems with your computer or player configurations.

	1-10 InfoChannel Players that in total receive less than 100MB of content per hour	*<50 InfoChannel Players that in total receive less than 500MB of content per hour*	*<200 InfoChannel Players that in total receive less than 2000 MB of content per hour*	*<2000 InfoChannel Players that in total receive less than 10 GB of content per hour*
Recommended minimum storage	40GB*	RAID 1,5 80GB+ Each*	RAID 5, 10, 50 80GB+ Each*	RAID 5, 10, 50 80GB+ Each*
Recommended Operating Systems	Windows 2003 Server Web Edition; Windows 2003R2 Server; Windows 2000sp4 Server; Windows XP Professional SP2			Windows 2003R2 Advanced Server; Windows 2000sp4 Advanced Server
Minimum Processor Speed & Type	1xCPU: Intel P4E@2.8+ GHz/800MHz FSB, HT-enabled. [5xx or 6xx series] or AMD Athlon64-X2 3800+	1xCPU: Intel P4E@2.8+ GHz/800MHz FSB, HT-enabled. [5xx or 6xx series] or AMD Athlon64-X2 3800+	1x"Dual Core" Intel Pentium-D 8xx or 9xx-series or 2xCPU: Intel XEON @2.8+ GHz or 1x AMD Athlon64-X2 4200+ or 1x AMD Opteron 1xx/2xx	2xCPU: Intel XEON @2.8+ GHz, with large L2/L3 caches, HT-disabled or 2x AMD Opteron 2xx
Minimum RAM Size	512 MB	512 MB	1024MB	2048MB

** Storage requirements vary greatly depending on the size of the content being stored. Although these requirements offer guidance, they should be re-evaluated when the size and amount of your content is determined.*

Prep Checklist and Installation Configurations

In addition to reviewing the hardware requirements as listed above, you must decide what kind of complete set-up you wish to run. The following section will provide a step-by-step procedure to assure your installation goes smoothly, and your desired results are readily achieved.

Preparation Checklist

This list is a guide to make sure you have everything in order before you install.

InfoChannel Content Manager 5 quick start guide

InfoChannel Content Manager 5 DVD-ROM

InfoChannel Content Manager 5 USB Key

Installation

Please follow the installation instructions provided in the InfoChannel Content Manager 5 quick start guide.

Licensing

Please refer to the instructions provided in the InfoChannel Content Manager 5 quick start guide.

Once Installation and Licensing is Complete

Before proceeding to upload your content, create playlists, etc., Scala recommends that you:

1. Create a channel
2. Create and configure a player.

Why is this important? If you don't create a channel first, you will need to edit an existing player to point to a newly created channel. However, if you change your mind later as to which player is playing which channel, you can still modify an existing player to use a different channel.

InfoChannel Content Manager Channel Configuration

Access InfoChannel Content Manager using a supported web browser. Then login using the Administrator user account and the password you chose as part of the installation.

1. Once you have logged into Content Manager, using the left navigation panel, click on Planning (to expand the menu), then click Channels.

2. To create a new channel, simply click the New button. In the Properties tab under Channel Details, in the Name field, type a name for the channel.

3. Click the Frameset tab.

4. Under Frameset Properties, select an existing frameset using the Frameset drop down menu.

5. Click Save.

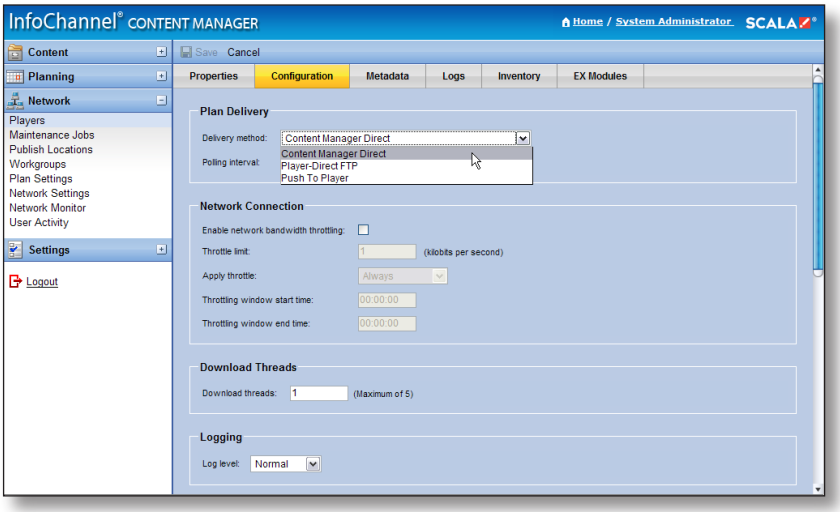
Player Configuration at the Content Manager Side

Players need to be "created" in the Content Manager software so they will be able to effectively communicate with each other.

1. To create a new Player in Content Manager, click on *Network* (to expand the menu), then click on the *Players* button to open the Players panel.

2. Select the *New* button at the top of the panel and provide the name and description for your player, and select a channel that will be used.

3. Choose the method which Content Manager will use to deliver the plan:



- Content Manager Direct – The plan file is stored locally within the Content Manager's web folder.
- Player-Direct FTP – The plan file is delivered to the Player directly using the player's built in FTP server.
- Push to Player – The plan file is delivered to a shared folder or FTP location. This folder/location can reside on the player directly, or be located somewhere from which both the Content Manager and the Player have access.

4. Once you have made your decisions, be sure to click Save to retain the information you have entered.

InfoChannel Content Manager stores all content locally. When a new plan is generated, the player(s) will retrieve the plan file. The player then downloads the content it needs based on what is outlined in the plan. Since the files are downloaded directly from InfoChannel Content Manager, all of the Players must have

access to the InfoChannel Content Manager.

Scala recommends that you configure your players in Content Manager **FIRST.** Once that is accomplished, please install and configure the individual players as explained below.

Installing & Configuring InfoChannel Players

The Scala Player is more than just a computer with a display – it is a sophisticated software system. The Player not only receives information, it also communicates with Content Manager. Addtionally, it will automatically report back to Content Manager at regular intervals, with a series of "heartbeats", to let it know it is still functioning properly. Furthermore, it will check for media updates in scheduled playlists with newly-generated plans from Content Manager.

To ensure your sophisticated software continues to run efficiently, it is important to start with the right hardware – optimized and configured expressly for your broadcast display requirements. This section not only addresses the hardware requirements you will need to run the Scala Player, but also the configurations you'll need to communicate and transfer your media and playlists.

InfoChannel Player 5 Hardware Requirements

The basic hardware requirements for running the Player software will vary depending on the installation site and the display scenarios involved. Your particular set-up will undoubtedly be unique to your needs, but the core of the installation is the computer which the software is going to be installed onto. Below are some general hardware system

recommendations:

Hardware recommendations for InfoChannel Player 5

	Low-end InfoChannel Players & InfoChannel Designers	***Mid-range InfoChannel Players & InfoChannel Designers***	***High End InfoChannel Players & InfoChannel Designers***
Display Resolutions up to a maximum of	1024x768x32bpp	1280x768x32bpp	1920x1080x32bpp
Recommended minimum storage	40GB/2MB-Cache, 5400RPM ATA-100 or SATA-150 or better.	80GB/8MB-Cache, 7200RPM ATA-100 or SATA-150 or better.	RAID-1, 80GB/8MB-Cache, 7200RPM ATA-100 or SATA-150 or better.
Recommended Operating Systems	Windows XP Professional SP2 (32 bit) or for larger networks contact Scala for an XP Embedded HD image (lower cost & preferred)		
Minimum Processor Speed & Type	Intel P4-based Celeron-D-300-series CPU's at 2.66 GHz+. AMD Sempron, 3100+	Intel P4-500/600-series, 2.4 GHz+/FSB 800MHz+ or better. AMD Athlon64, 3200+	Intel P4-600's CPU or better. AMD Athlon64-X2, 3800+
Minimum RAM Size	256MB of DDR-SDRAM	256MB of DDR-SDRAM	512MB of DDR-SDRAM
Graphics sub-system	An integrated graphics processor such as: ATi RADEON Xpress 200G, or nVidia Geforce 6100 IGP	A discrete graphics processor on an AGPx8 or PCIeX16 card such as: ATi RADEON x600 or nVidia Geforce 6600 or better	A discrete graphics processor on an AGPx8 or PCIeX16 card such as: ATi RADEON x1300 or nVidia Geforce 7600 or better

Hardware Preparation Checklist

InfoChannel Player 5 quick start guide

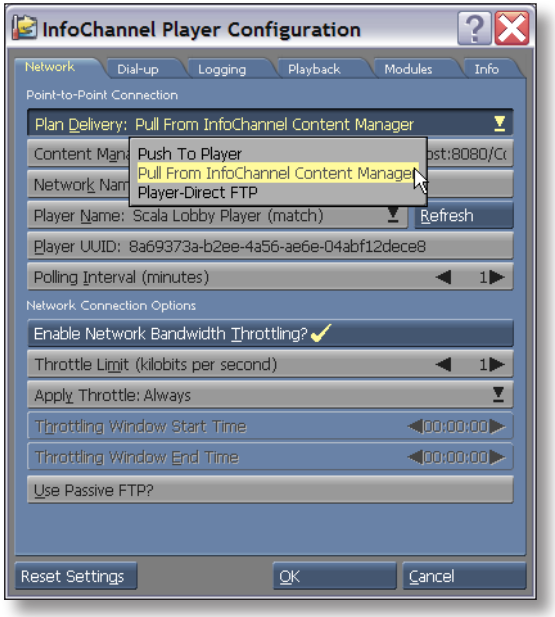
InfoChannel Player 5 CD-ROM

Player Installation and Configuration

This section will provide different types of physical Player configurations. These are the most common combinations

of networks and players/monitors currently used by our customers.

- Content Manager Direct – The plan file is retrieved from the Content Manager's web folder.
- Player-Direct FTP – The plan file is retrieved from the player's built in FTP server.
- Push to Player – The plan file is retrieved from a shared folder. This shared folder can reside directly on the player, or be located on a shared server from which the Content Manager and the Player have access.

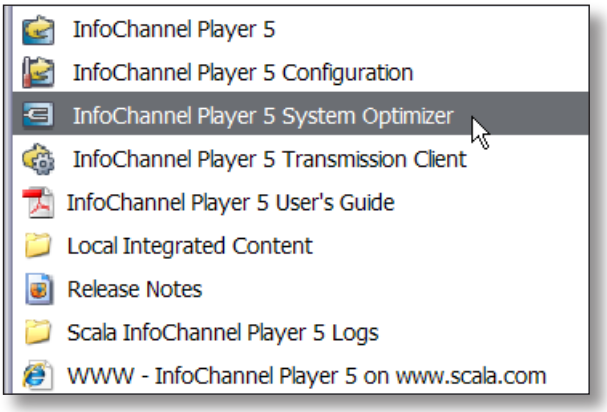


Licensing

All InfoChannel Players receive their license directly from InfoChannel Content Manager 5. Players must be able to contact InfoChannel Content Manager every so often to obtain an updated license. Without a valid license, your content will not playback.

Player Computer Optimization

Your player computer can be optimized for greater efficiency and security. The Scala System Optimizer tool adjusts various Windows system settings on a Player computer for optimal behavior. This tool can modify various registry settings, adjust or disable various Windows services, and even schedule a weekly reboot. You can simply use the recommended settings, or customize the set changes you wish to perform. To start this tool simply click the *"Scala System Optimizer"* link in the startup menu.


InfoChannel Player 5
InfoChannel Player 5 Configuration
InfoChannel Player 5 System Optimizer
InfoChannel Player 5 Transmission Client
InfoChannel Player 5 User's Guide
Local Integrated Content
Release Notes
Scala InfoChannel Player 5 Logs
WWW - InfoChannel Player 5 on www.scala.com

Example Configurations

This section provides some configuration examples for different physical network/player configurations. These are the most common combinations of networks and players currently used by our customers.

InfoChannel Designer and InfoChannel Content Manager on the same computer, InfoChannel Player(s) are located on separate computer(s):

- InfoChannel Designer publishes directly to the *local* installation of InfoChannel Content Manager using the "Content Manager Direct" option
- InfoChannel Content Manager is configured to store the player plans in the web folder (Content Manager Direct option).
- InfoChannel Player(s) retrieve their plans using the "Content Manager Direct" option.

InfoChannel Designer, InfoChannel Content Manager, and InfoChannel Player are on separate computers:

- InfoChannel Designer publishes directly to InfoChannel Content Manager using the "Content Manager Direct" option
- InfoChannel Content Manager is configured to store the player plans in the web folder (Content Manager Direct option).
- InfoChannel Player(s) retrieve their plans using the "Content Manager Direct" option.

Within these basic configurations, you can use different configuration options. For example:

Instead of publishing from Designer directly to InfoChannel Content Manager, you could publish to a shared folder or FTP

site (from which both Designer and Content Manager have access). You could then setup a Publish location in Content Manager which would reference that location. Content Manager would then poll the location for changes based on the interval which has been configured.

Instead of Players retrieving the plan file directly from Content Manager, Content Manager could deliver the plan file directly to the player (using the Player Direct FTP option). To do this, in Content Manager change the delivery type to Player Direct FTP, and enter a password. Then on the player, change the delivery type to Player-Direct FTP and enter the same password you used in Content Manager. Note that the FTP password must match in both configs!

What's new?

Templates *(available separately)* – Data driven content templates will allow even your least design savvy employee to create great looking displays. Your design team can create templates in InfoChannel Designer 5, using variable data fields which authorized users can later populate and preview through the all-new InfoChannel Content Manager 5 interface. Now, creating new content, or an entire channel, is easier and faster than ever. This feature is sold separately. Please contact your reseller for more information on availability and pricing.

Plan-based Content Distribution – Based on your channel "plan/schedule", which is easily defined through the InfoChannel Content Manager 5 graphical interface, content is now automatically distributed to all "points of playback", saving you time and resources.

Timetables – Define one-time or recurring time slots which employ variable recurrence patterns and start/end dates. As

you specify playlists for each time slot, you may automatically view it graphically in the new InfoChannel Content Manager 5. With this new graphical, web-based, scheduling interface, scheduling your content couldn't be easier.

Playlists– If your content is composed mostly of videos, flash, or static images -- you can create your playlists using the web-based interface in the new InfoChannel Content Manager 5. Of course, Scala InfoChannel Designer 5 still offers a significant and proven advantage for any digital signage deployment by allowing the creation of data-driven templates and other truly dynamic digital signage messaging in less time and at a lower cost; while allowing you to leverage your existing media assets.

Multi-channel Support – Run multiple channels from a single player, immediately reducing your hardware, OS licensing, and administration costs.

Multiple Independent Zones – Easily create multiple zones with each zone displaying independent content.

Better Compatibility - Scala InfoChannel Content Manager 5 is compatible with proxies / ACNS and several database structures including: MySQL, PostgresSQL. Additional database support will be coming soon.

Database Backend – Choose the server and database which works best in your environment.

Simplified Content Delivery – Content can now be delivered over HTTP/HTTPS and firewall transversal is greatly improved, as are other perceived IT security issues.

Maintenance Scheduling – Regular hardware maintenance can be added to the plan-based scheduler in the new InfoChannel Content Manager 5. Once entered, maintenance requirements

can be executed at specified times, with minimal disruption to your digital signage network.

Roles and Workflows – Role functionality allows users/groups to be assigned different access rights for improved security and workflow.

New User Interface – Navigate the Scala InfoChannel 5 platform faster and easier with a more intuitive and friendly user interface. The new InfoChannel 5 user interface makes extensive use of context menus, rich web-interfaces with drag and drop features, and more.

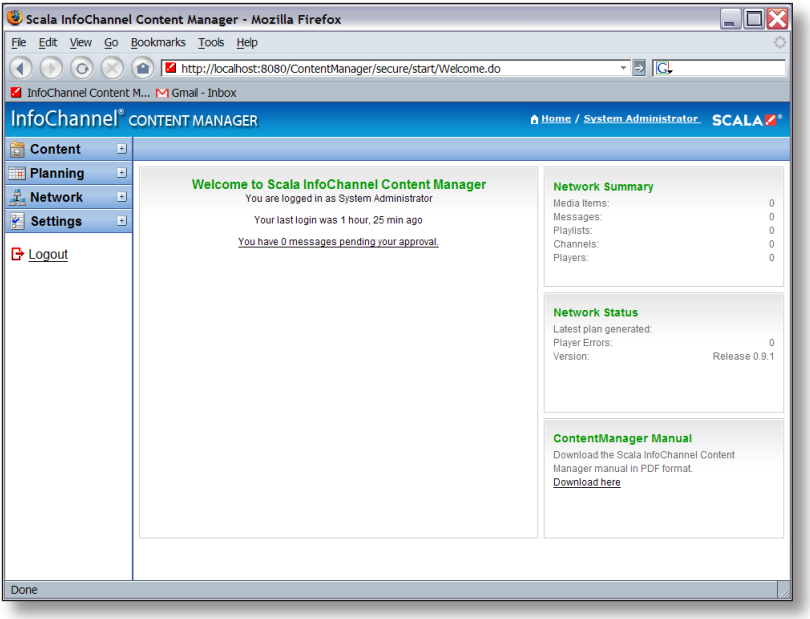
Transmission Server Module - Server-side component which manages most communications between InfoChannel Player and the central servers. It is installed as a service on the same system as InfoChannel Content Manager, and runs in the background.

Server Support Module - Server-side support component which generates thumbnails for display within the Content Manager. It is installed as a service on the same system as InfoChannel Content Manager, and runs in the background.

2 InfoChannel Content Manager 5

Overview: Content, Scheduling and Workflow

In this section, we'll take you through the User Interface – the menus, buttons and panels – and the steps of configuring all the components of your InfoChannel network. Setting up Content Manager to manage and schedule your media can be as easy as following a few simple steps. The user-friendly interface will take the guesswork out of configuring your Playlists, Channels and Players.



Since InfoChannel Content Manager 5 is an HTML based application, a good web browser is essential for consistent performance. We recommend Mozilla FireFox for the best

results, although some testing has shown that Internet Explorer will still function with only minor cosmetic irregularities to the User Interface.

Glossary of Terms Introduced in this Section:

Media – The library of content available, consisting of clips, sounds, images and scripts; either published from InfoChannel Designer, Content Manager File Uploader, or Content Manager's Remote Publish Location feature.

Playlist – Includes the selected media items that will be scheduled for playback.

Channel – Defines how the Player will display the media on the screen in configured Framesets.

Frameset – Sections that appear on the player's screen which contain the playlists in a channel.

Schedule – Determines the day/time a playlist is played in a channel on a Scala Player.

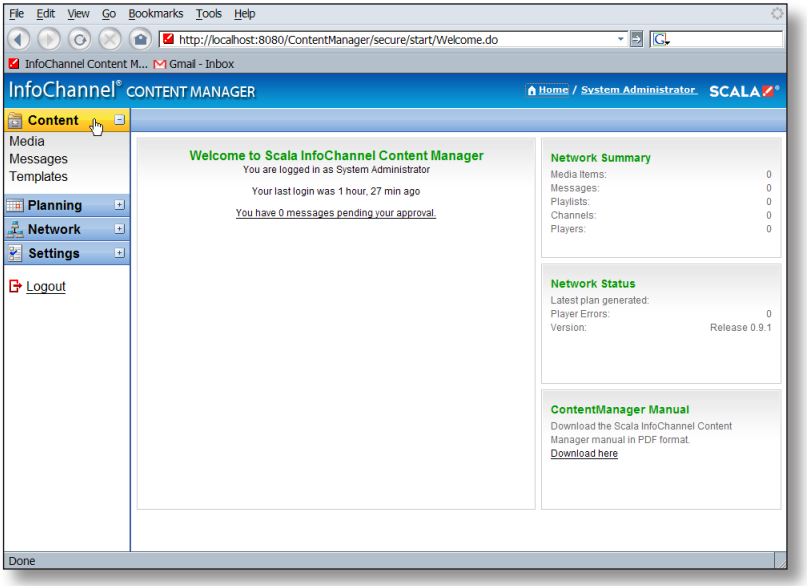
Plan – Submits the scheduled playlists to the Player.

The InfoChannel Content Manager User Interface

The design and layout of the interface is created to allow you to manage your project workflow in a streamlined process – working from top to bottom in the list of menu items. In the following sections we will explore some of the major items and follow the workflow process of setting up and generating a plan to a Player.

The Content Menu

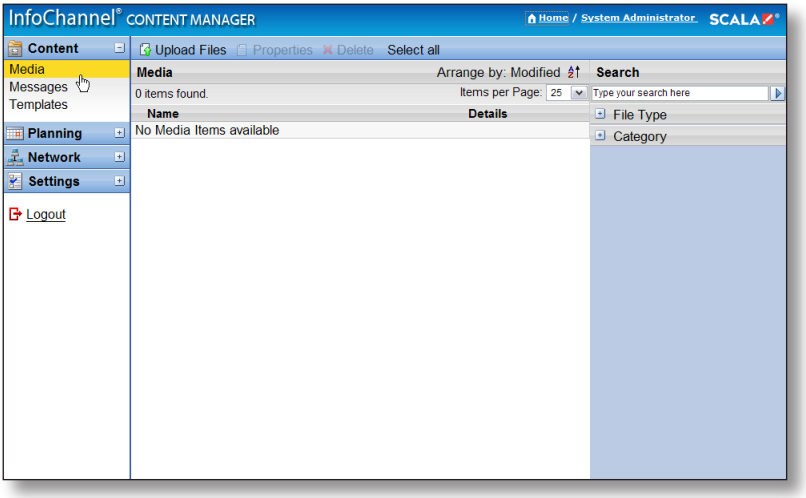
The Content menu is where you will find your Published scripts and other media items. You may also add messages and upload templates through the panels located in this menu.



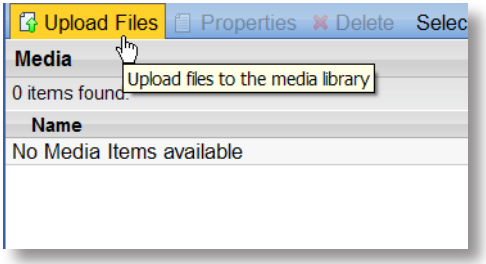
Media

Clicking on the *Media* button will open the panel that reveals what media items you currently have in your library. When a large library is available, you can sort through the list by file name or simply the date it was modified.

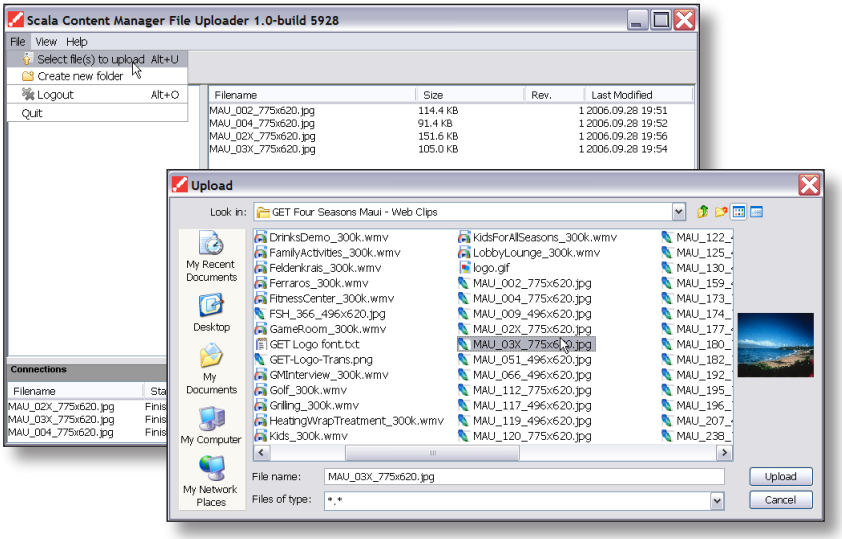
Most of your media will be uploaded to your library via published scripts from InfoChannel Designer. When you open Content Manager and view Media, you will see the Scala Scripts, video clips and images.



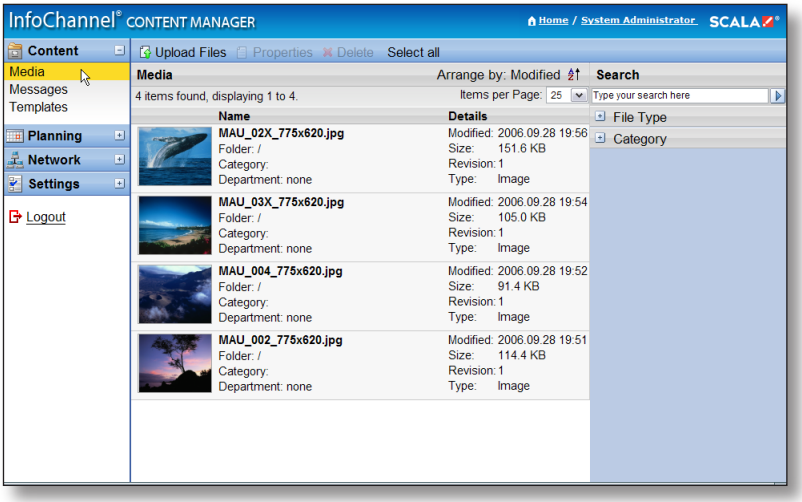
If you don't have any items that have been published from InfoChannel Designer into your media location, you can upload media items by selecting the *Upload Files* button at the top of the panel.



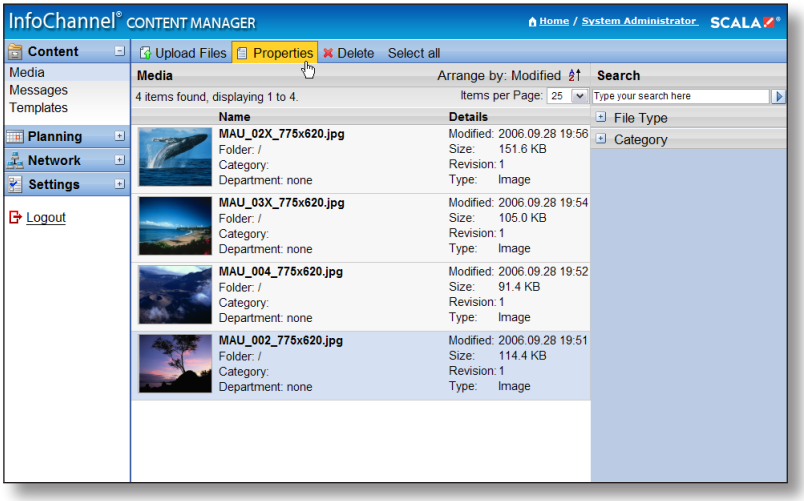
This will open the Scala Content Manager File Uploader. You can select any files you wish to upload by choosing the *File>Select file(s) to Upload…* from the *File* pull-down menu. This action will open a Windows file dialog where you can easily navigate to the location on your hard drive and select the file(s) you wish to upload.



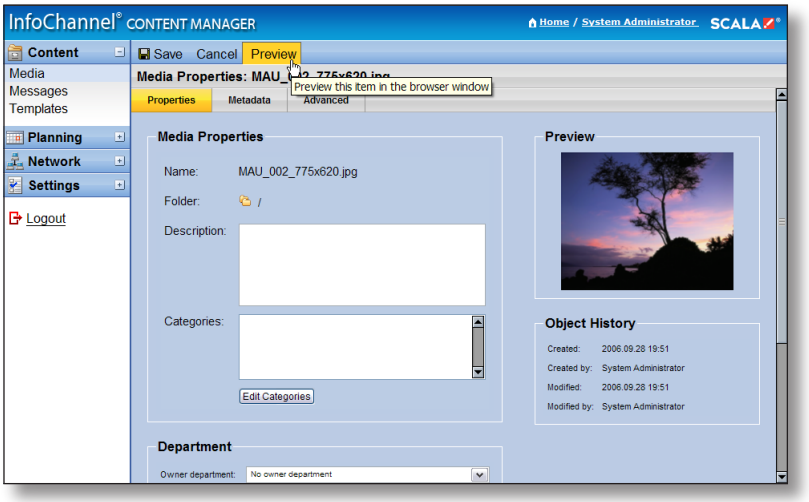
Click on the *Media* button in the *Content* menu once more to refresh the list of media items. By doing so this will allow any files you have just uploaded to Content Manager to be recognized.

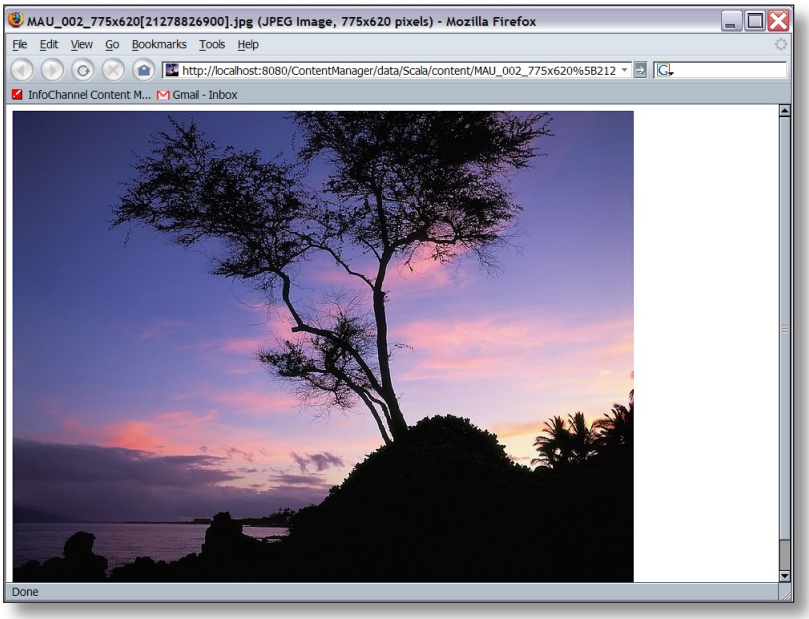


To determine the properties of a media item in the list, select the item and click the *Properties* button located at the top of the panel.



Once the Properties panel is open, you may preview the selected media item by choosing the *Preview* button at the top of the panel.

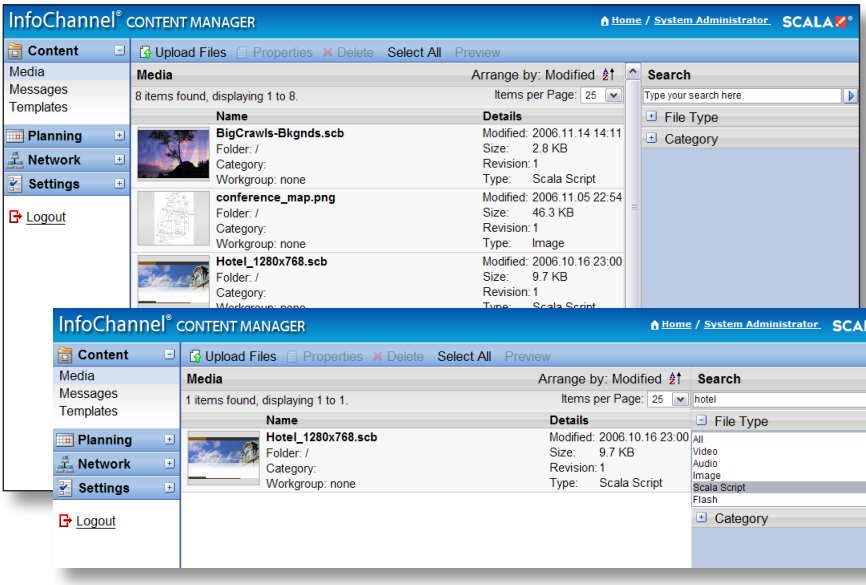



MAU_002_775x620[21278826900].jpg (JPEG Image, 775x620 pixels) - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
http://localhost:8080/ContentManager/data/Scala/content/MAU_002_775x620%5B212
InfoChannel Content M... Gmail - Inbox
Done

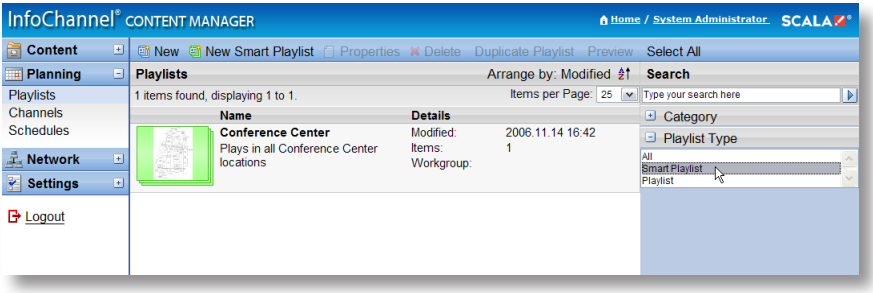
Searching

If you have an extensive library of accumulated media, channels and players, having the ability to search for something specific instead of scrolling through a list in hopes of finding what you are looking for, can be very helpful.

InfoChannel Content Manager contains a search function in all of the major category panels for Media, Messages, Templates, Playlists and Players. You can use the *Search* criteria to define the kind of item you are looking for, or you may enter the search term in the space provided and click the arrow on the right (or use the *Enter* key) to reveal the results in the list panel.

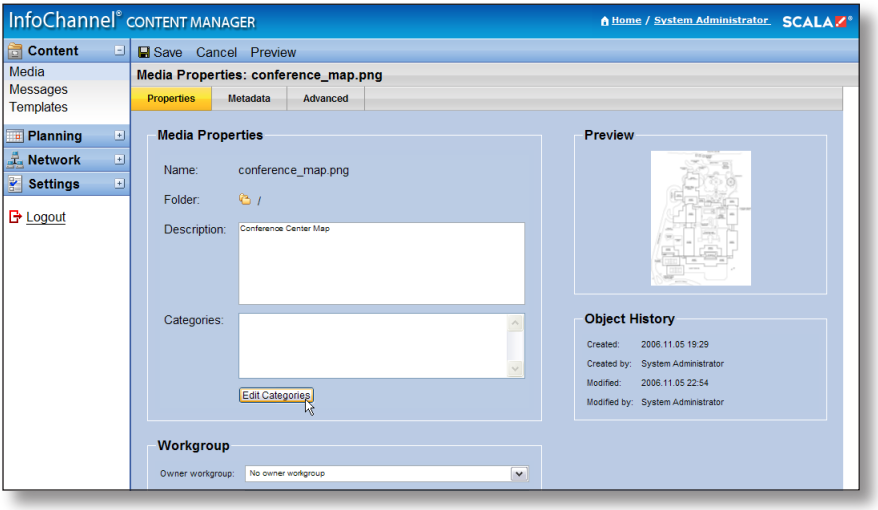


Most of the list panels will have F*ile Type* and *Category* selections from which to choose, and although they will function similarly, each of the different list panels will have search criteria specific to its list; such as *Channels* and *Player Groups* for the *Player* search panel.

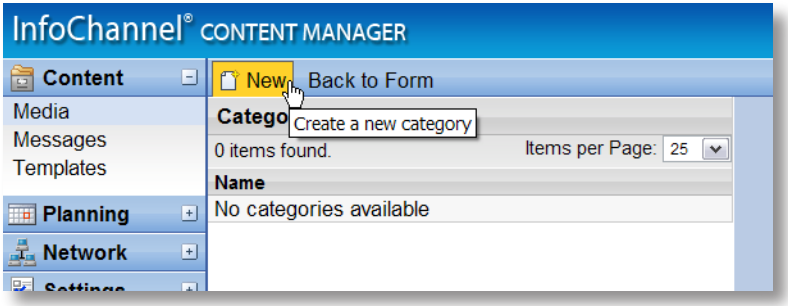


Media Categories

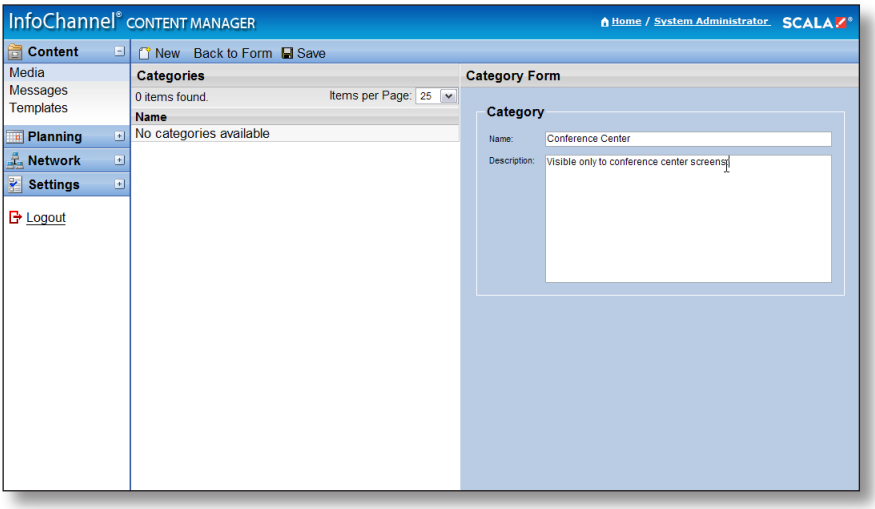
Categories are labels that can be created and assigned to media items, templates, messages and playlists. These labels may also be used to help organize and search for items that match your desired category. To create and assign categories, first select a media item to view its corresponding *Properties*. You can enter its description and choose *Edit Categories* to create or assign the properties.



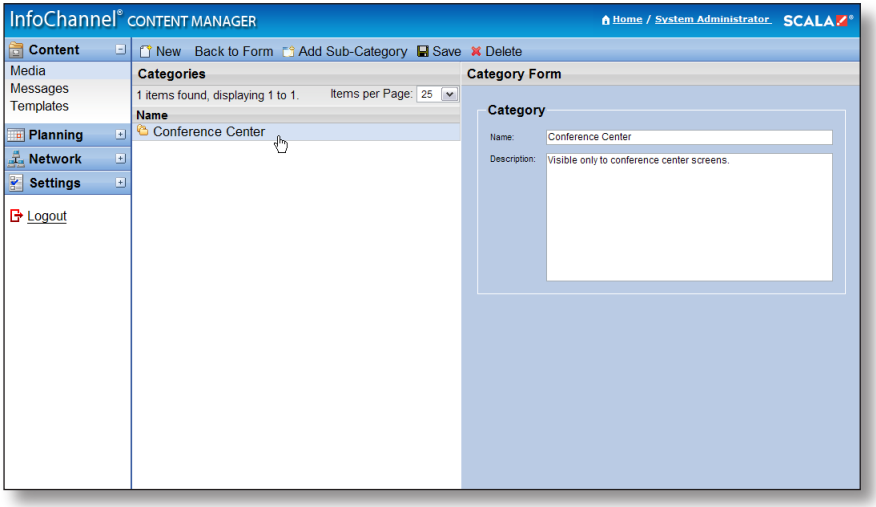
If categories have not been created, then you will see the message in the list "No categories available". Select the *New* button at the top of the panel to create a new category.



A new *Category Form* panel will appear on the right side. Provide a name and description for your new category.



Click the *Save* button at the top of the category panel and your new category name will appear in the list. When selected in the list column, the *Category Form* will appear on the right where edits can be made and re-saved.

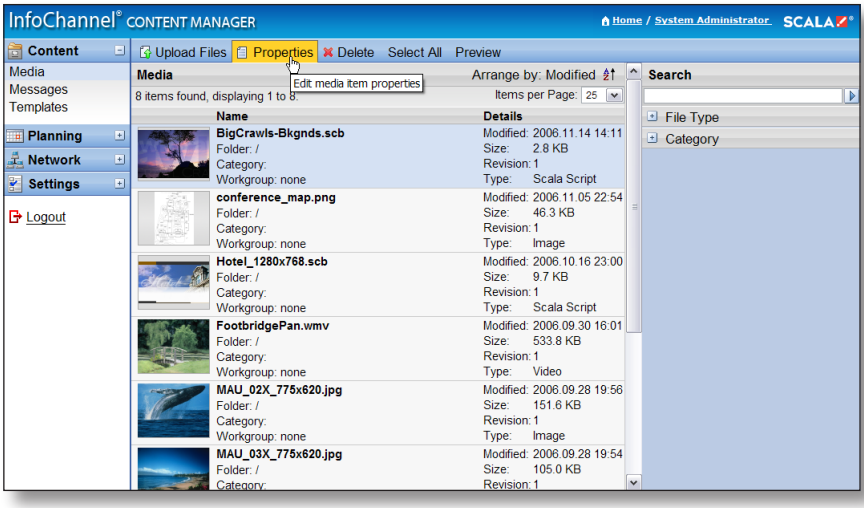


To further define your media organization, you may also create nested sub-categories. Simply click the *Sub-Categories* button at the top of the panel and complete the *Category Form* in the same manner as the master category.

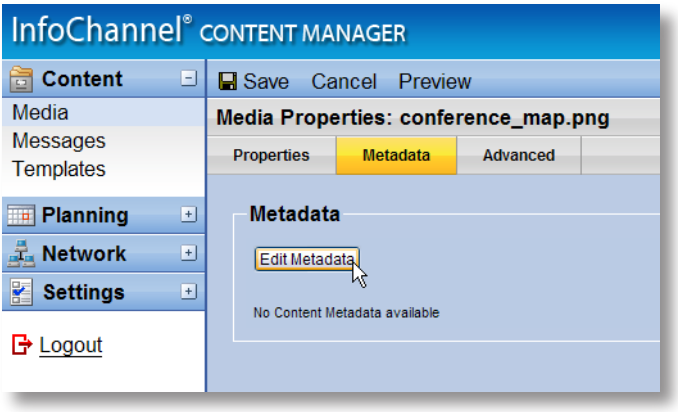
When you have completed editing Categories, simply click the *Back To Form* button to exit back to the media item properties.

Media Metadata

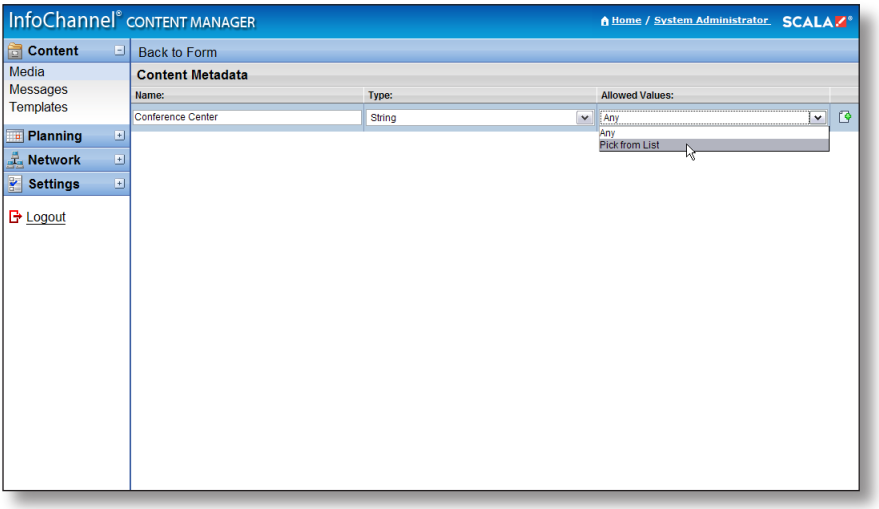
Metadata are tags which can contain specific values for each item. Media items as well as messages, channels and players may contain metadata, which is used to control playback based on criteria (e.g.: metadata must equal a specified value) or match (two items must have matching values for each metadata tag). To apply metadata to a media item, first select the desired content in the Media panel and then click on the *Properties* button at the top of the panel.



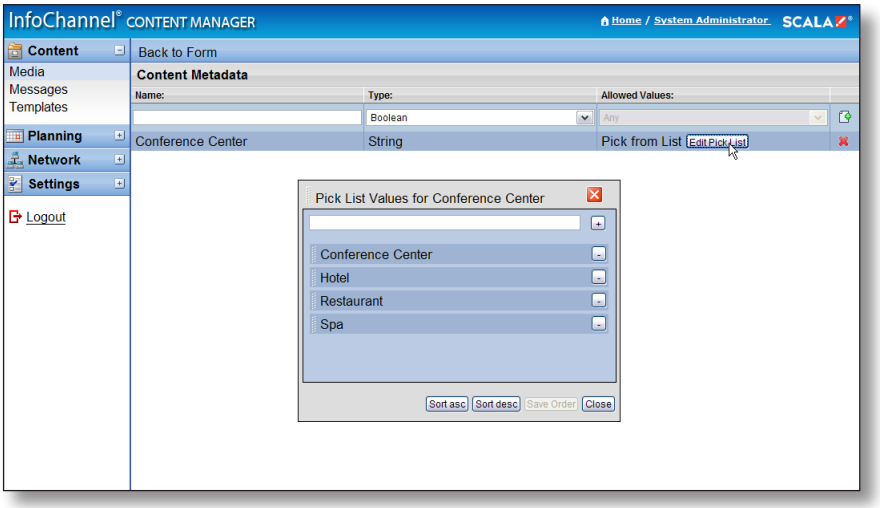
Click the *Metadata* tab and then the *Edit Metadata* button for options and values.



Define the metadata tag name and type, and select the allowed values. Then simply click the add metadata icon. In this example, the *Pick from List* option is selected.



You can create as many values as you wish from the Edit Pick List pop-up.



You can return to the media properties panel by selecting the *Back to Form* button at the top of the panel. Make sure you save any changes to include the newly applied metadata.

Metadata has many uses. Metadata on media and messages is used when making a smart playlist. Media with metadata matching your criteria will automatically be added to the playlist. For instance, you can add all media with the "xyz brand" so that any new ads will automatically appear in the playlist without having to add them manually.

Metadata can be on channels to put restrictions on which channels can be sent to which players. If you try to assign a channel to a player and their metadata does not match, you will receive a warning pop-up in Content Manager. This is used to prevent accidentally sending a channel with the wrong aspect ratio to a player.

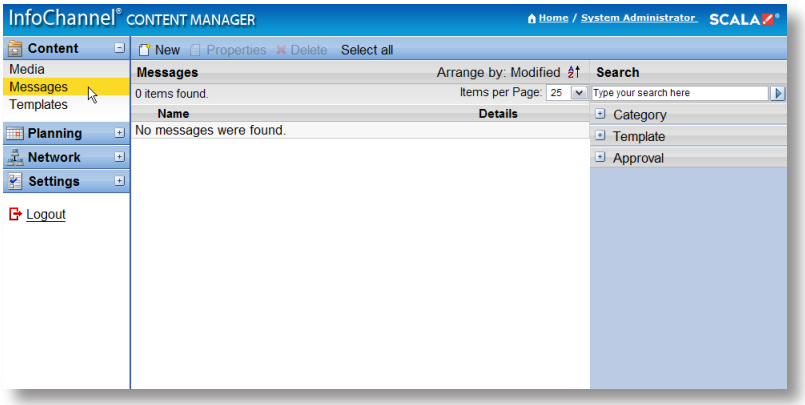
Metadata on players may also be used in playlists. When making a playlist, you can add criteria to an item (media, message or subplaylist) and the item will only play if it matches the player's metadata. You can have several different "language" metadata fields applied to scripts or media items in your playlist, and use that metadata to route the correct corresponding languages to the assigned players. And a programmer using VBScript, JavaScript or Python can access a player's metadata for database queries or to show the metadata on screen as a variable.

Templates and Messages

Clicking on the Messages button will open the *Messages* panel. This is where you can create and edit messages which can be added to the playlists. A message uses a template, which is a Scala script made with InfoChannel Designer, allowing the user to fill in text or replace images.

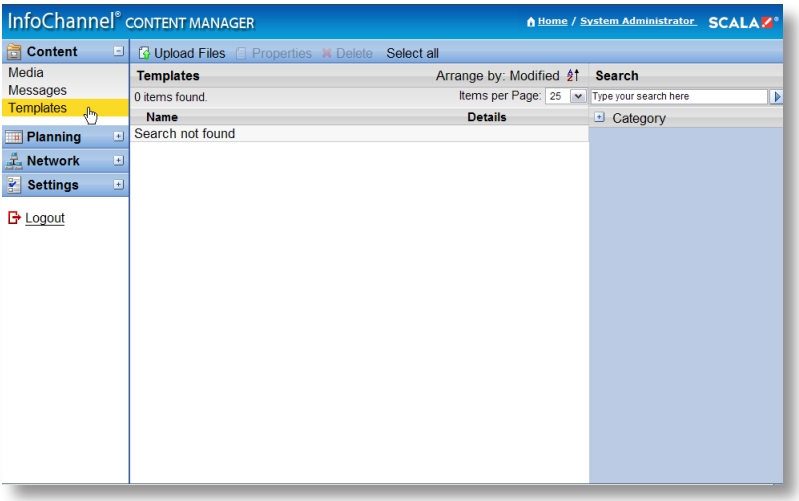
Before you can make a message you must have a template. If you know you have one or more templates, you can click New to create a new message.

Next, simply select a template for the message and click Next. This will reveal the Create new Message panel where you can fill in the text fields and replace images (if the template has images which are allowed to be replaced).



Messages have to be approved before they can appear on a player. If your user account does not have permission to approve messages, you can select the Request approval checkbox to request another user in order for it to be approved. Users with approval permission may view messages awaiting approval and accept or reject them as desired.

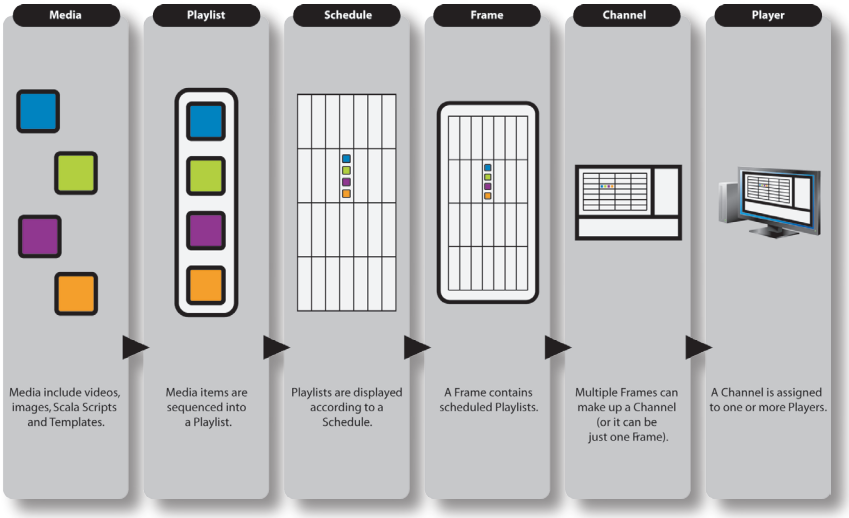
The Templates button opens the *Templates* panel where individual settings for each template may be modified. You can change the labels for each text field and also set limits on how many characters can be typed. To change the settings for a template simply select it and choose properties.



The Planning Menu

The Planning menu is where you will create, manage and schedule multiple playlists and channels to your players. Content Manager will distribute the Channel information as well as the Schedule, Playlists and Content to the Scala Players.

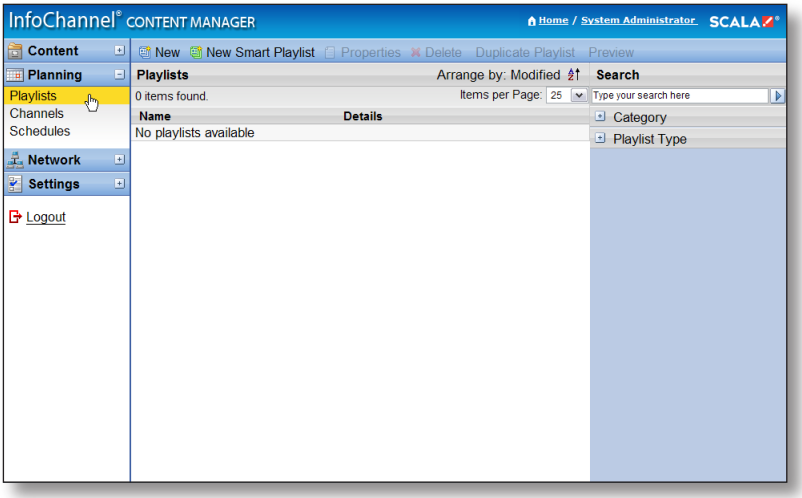
The simple content flow map shown below demonstrates how the process carries information from the Designer-published media to the Player.


Media
Playlist
Schedule
Frame
Channel
Player
Media include videos, images, Scala Scripts and Templates.
Media items are sequenced into a Playlist.
Playlists are displayed according to a Schedule.
A Frame contains scheduled Playlists.
Multiple Frames can make up a Channel (or it can be just one Frame).
A Channel is assigned to one or more Players.

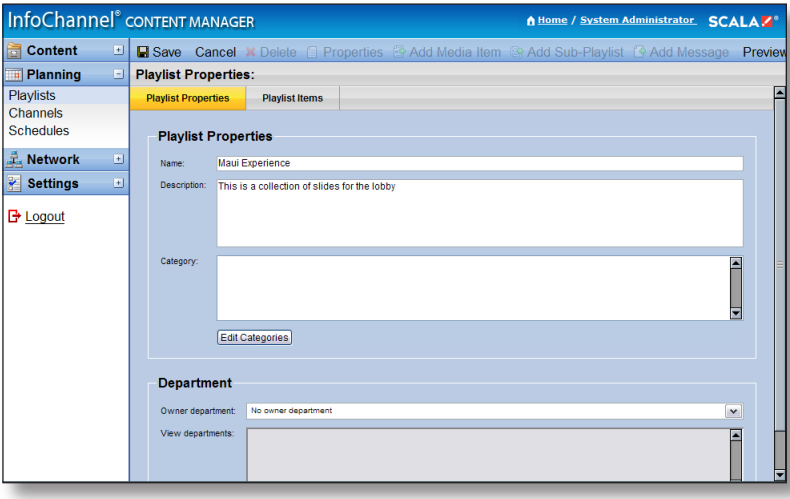
The flow of media content through InfoChannel Content Manager is a simple and intuitive process. Media (videos, images and Scala Scripts) are published from InfoChannel Designer or selected inside Content Manager and sequenced in a Playlist. Once a Playlist is created, it is assigned and scheduled to a Frame in a Channel which then plays on a Scala Player, or series of Players.

Playlists

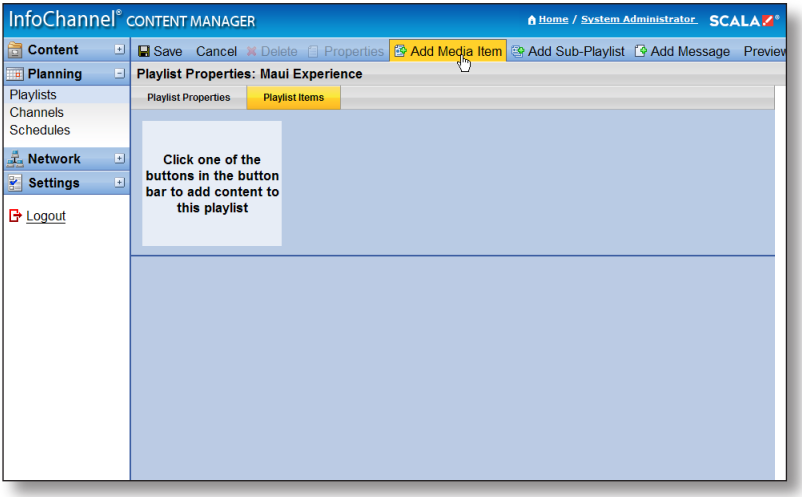
Clicking on the Playlists button opens up the *Playlists* panel, displaying them in a list. If you have several playlists in your library, you may list them in order by Name or Modified date using the *Arrange by:* button at the top of the panel.



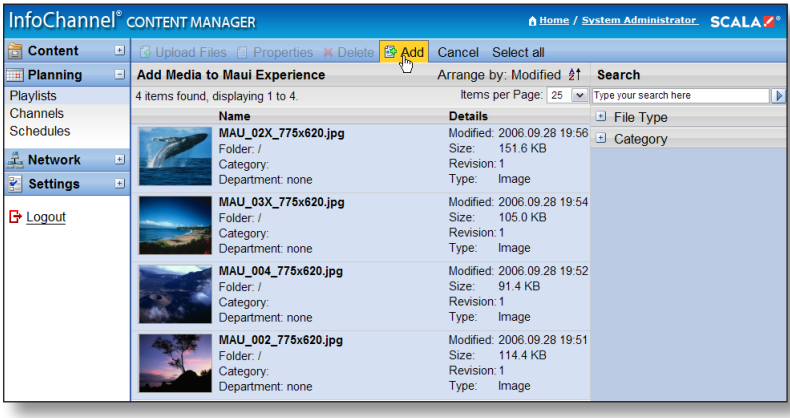
Click on the *New* button at the top of the panel to create a new Playlist. You can enter any descriptive information and properties of your new playlist here.



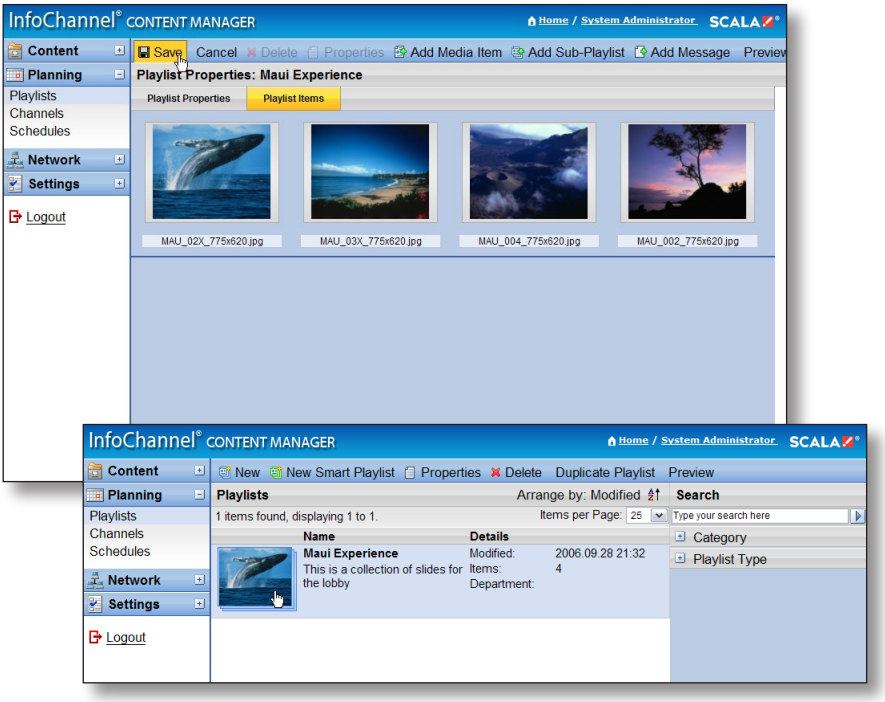
By clicking on the *Playlist Items* tab at the top of the panel you can add media items to your new playlist, using the *Add Media Items* button at the top of the panel.



Select the items from your media library that you wish to add to the playlist and click the *Add* button.



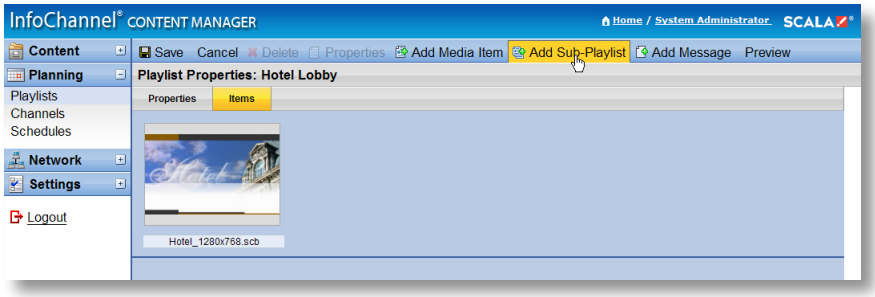
The newly added media items will now appear in the Playlist Items panel as thumbnails. Once you have finished adding items to your playlist, simply click the *Save* button and your modified playlist will appear in the Playlist panel.



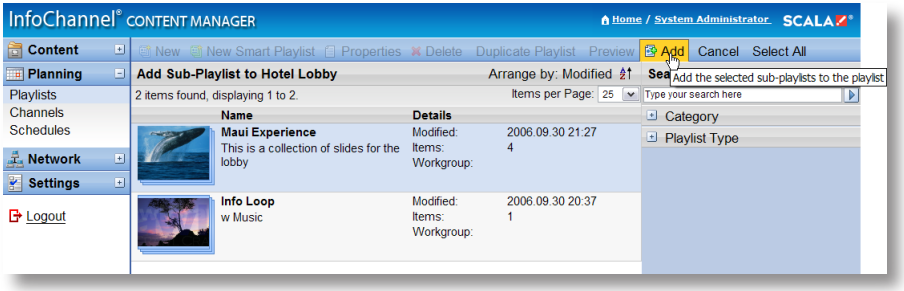
Sub-Playlists

Sub-Playlists are nested inside of each other, so you can create several smaller playlists which can function independently, or grouped together inside a larger, master playlist. When a Playlist is open, you can add any other playlist in your library as a sub-playlist.

First, select the *Add Sub-Playlist* button at the top of the Playlist panel.

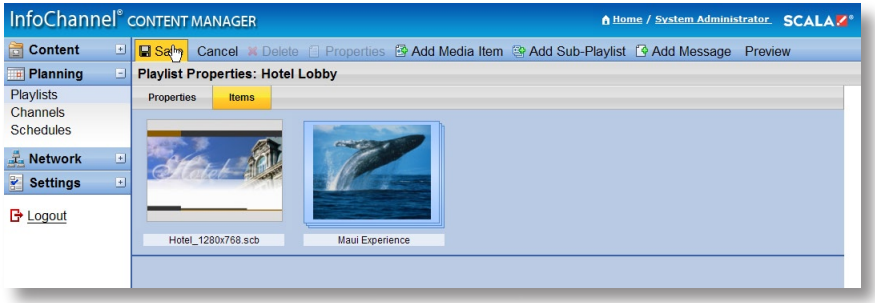


Then select a playlist from those listed in your library and click the *Add* button at the top of the panel.



The selected Sub-Playlist is now added to your master playlist in the Playlist Items panel.

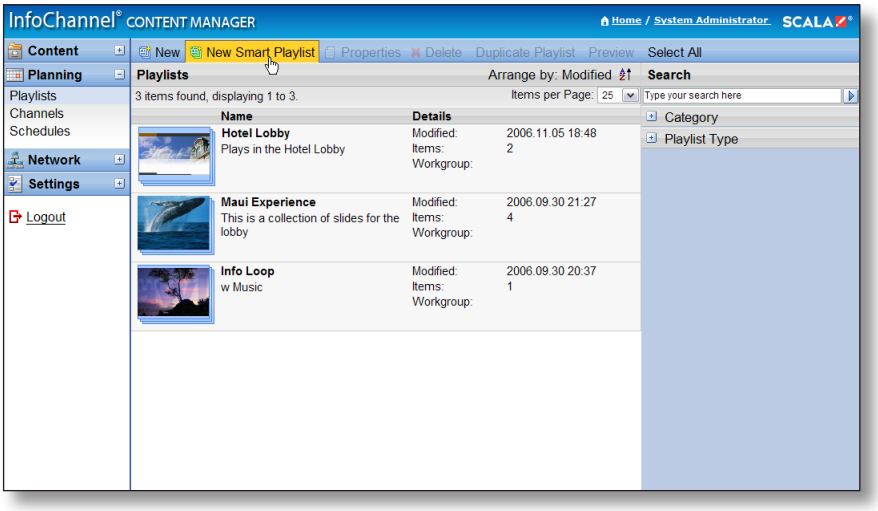
Click the *Save* button to retain the added Sub-Playlist items.



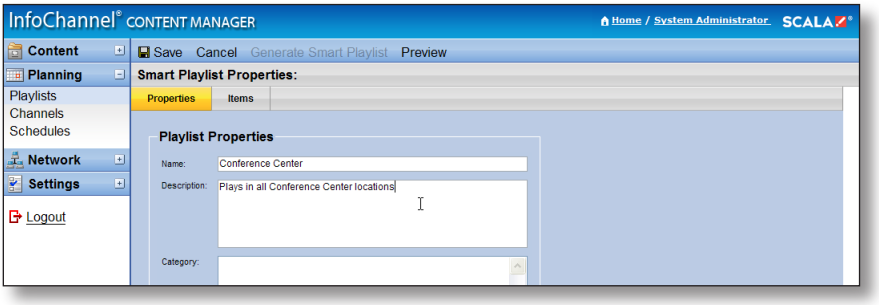
Smart Playlists

A Smart Playlist will allow you to set conditions that filter the desired media which will be added to the playlist. You may also specify transitions between those items; much as you would in an InfoChannel Designer script. It is also possible to set the duration for each on-screen media item.

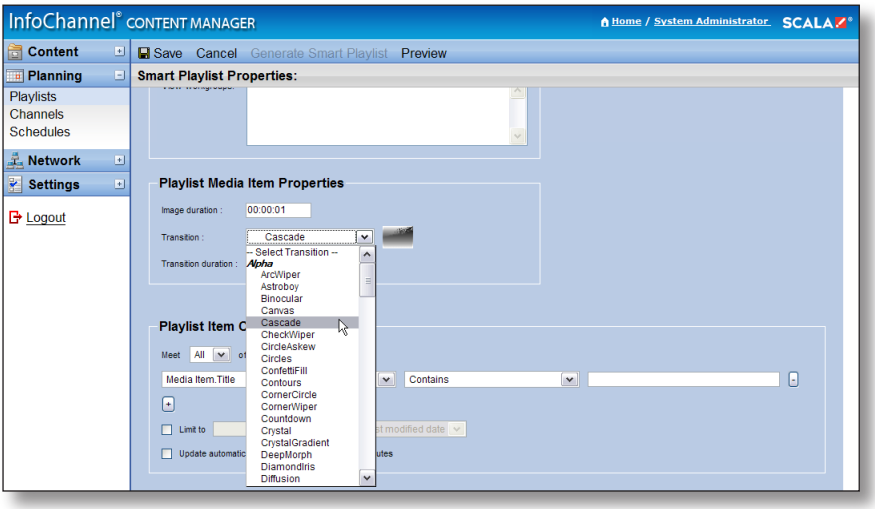
To create a Smart Playlist, select the *New Smart Playlist* button at the top of the Playlist panel.

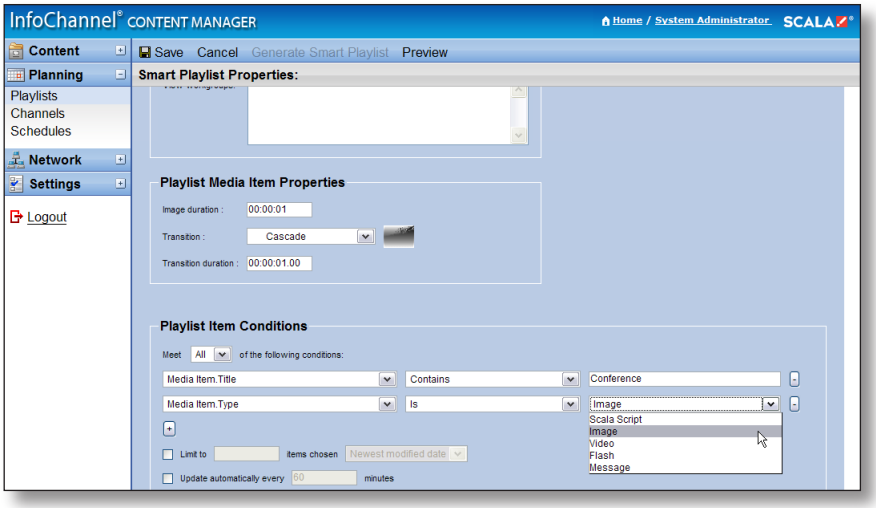


Give the Smart Playlist a name and description.



Scroll down to view the transitions and conditions which can be added, as well as how many media items you want to add to the playlist. Set the timing for the transitions and on-screen duration. Several conditions may be added for any selected media item.

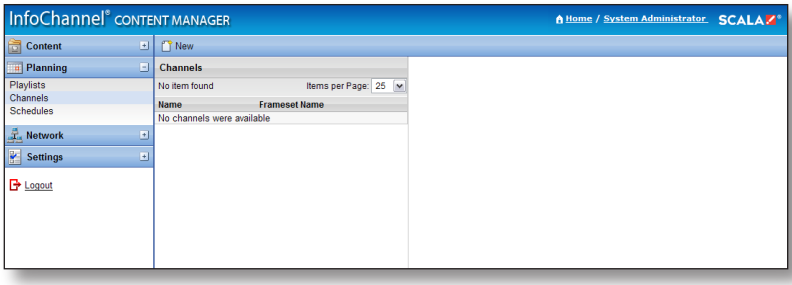




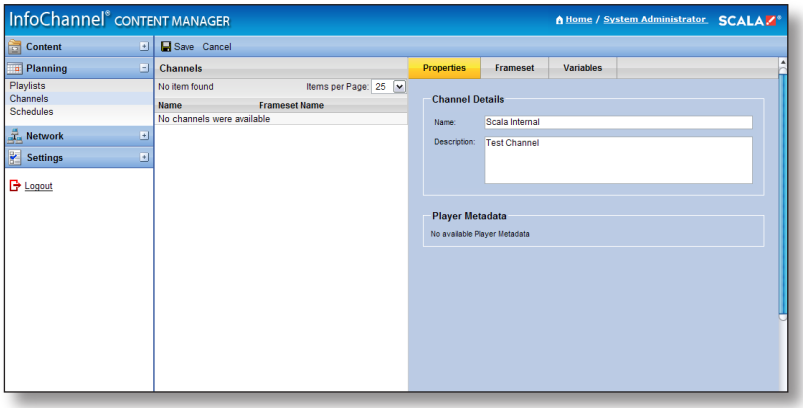
Channels

Creating a channel is required in order to send a playlist(s) to one or more players. Playlists contain the media and scripts, and the channel determines the schedule and screen layout in which the playlists will occur. Additionally, you can have more than one player and more than one channel. There are several preset options for display types, as well as "*Framesets*" which divide the screen into segments; each of these are capable of playing a different playlist.

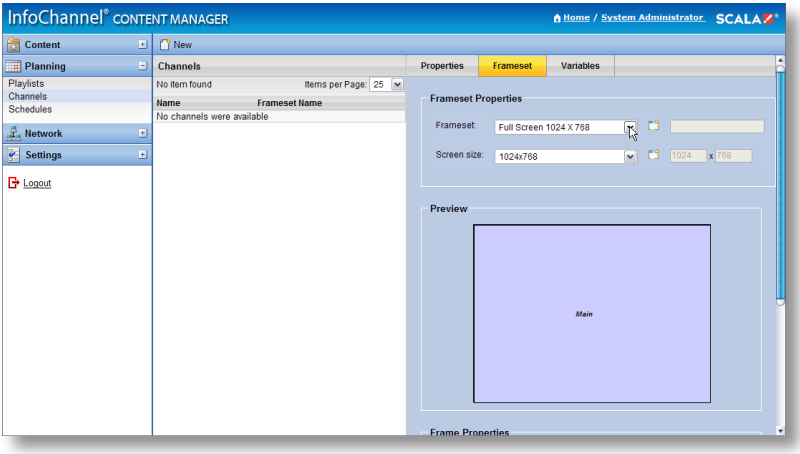
The first time you launch Content Manager, you will need to create a new channel.

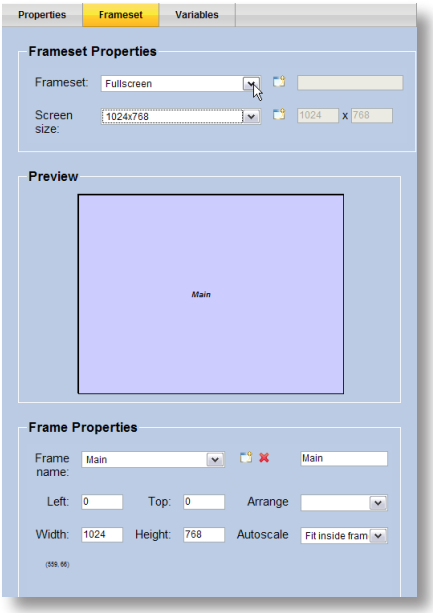


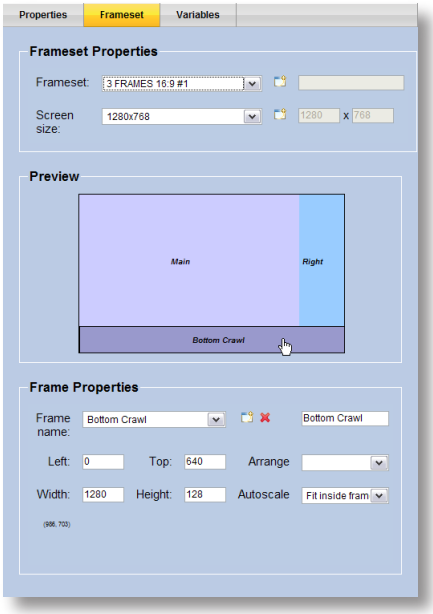
To create a new channel, click the *Channels* button under the *Planning* menu and click on the *New* button at the top of the Channels panel. Fill out the name and description for the channel so you can distinguish it from other channels in your list.



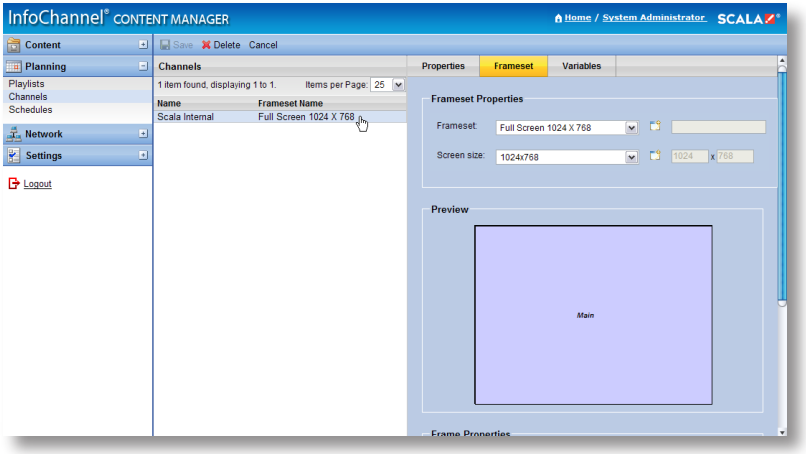
Click on the Framesets tab and select the frameset configuration and screen size from the preset selectors. You may also select a preset screen size and frameset layout – or, customize your screen size and framesets manually.







If you select a frameset or create a custom frameset that has more than one internal frame, you can adjust the sizes and names of the frames according to your specific design requirements in the lower half of the panel.



Be sure to click the Save button at the top of the panel to retain the properties and information for your new channel. You may also select any channel and change the properties and frameset configuration at any time.

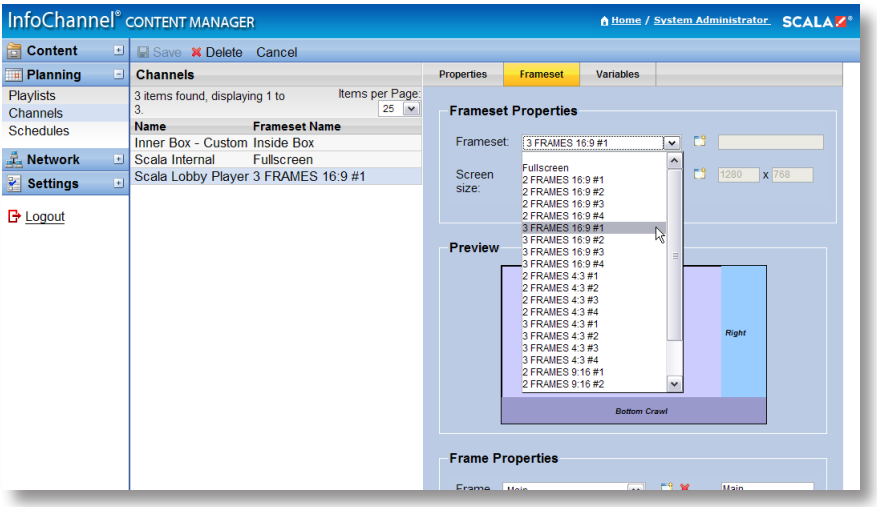
Frameset Templates

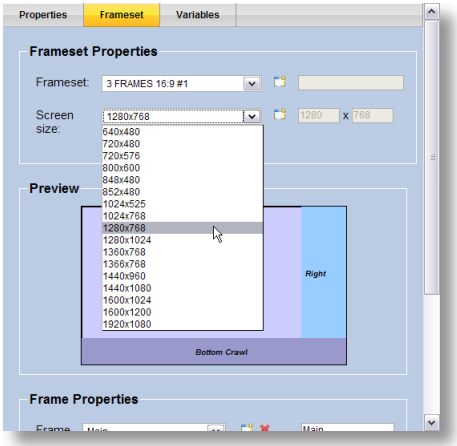
InfoChannel Content Manager comes with several preset "Templates" for Channel Framesets. These are commonly used configurations, which include a large selection of display sizes and resolutions.

The preset templates which are provided are a great starting point, however, we have also included several customizable options to complement your creativity.

When creating a new, or editing an existing channel, you have

the option of selecting an individual Frameset configuration. Simply use the drop-down selector in the *Frameset Properties* panel to make your selection.

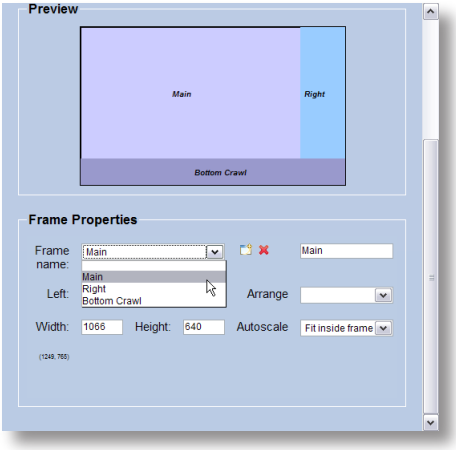




If the screen size/resolution is not correct, then you may select another preset or create a custom preset size. To the right of the drop-down selector.

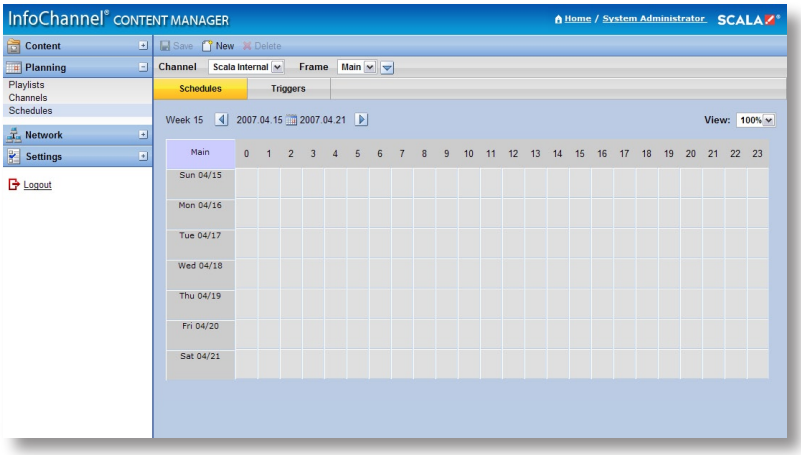
Scroll-down the panel to specify the individual frames in the frameset, using the selectors and boxes in the *Frame Properties* panel.

Be sure to click the *Save* button at the top of the Channels panel to retain the new configuration.



Schedules

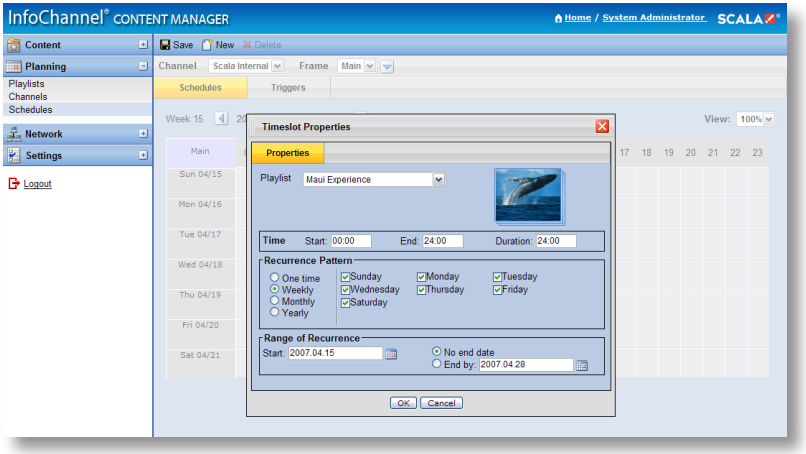
Schedules can be applied to each frame of a channel to define which playlist will play for a given time or date. To open a Schedules calendar panel, simply click on the *Schedules* button in the *Planning* menu.



You can create a new Schedule by clicking on the New button at the top of the panel. This will open a schedule Properties dialog, which will allow you to select the times & dates for your

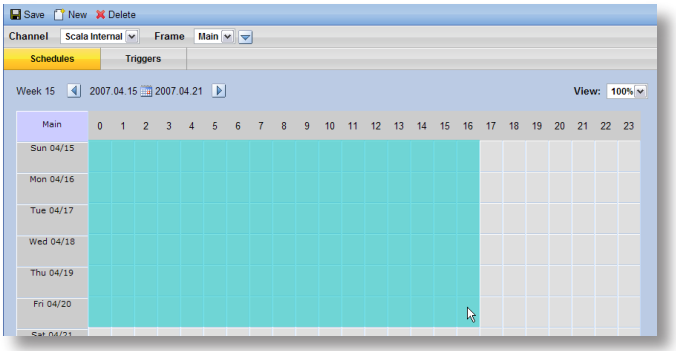
playlist to play. Make your selections and click the OK button at the bottom of the dialog.

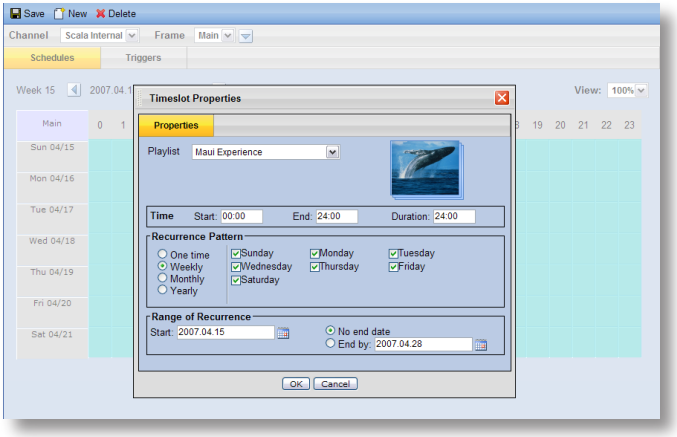
Alternatively, you can create a new schedule by click-dragging



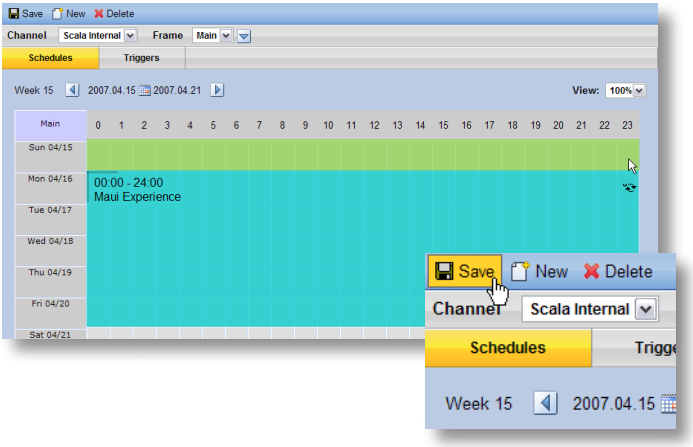
out a rectangular selection in the calendar grid, to cover the days and times of the playlist you wish to schedule. This will also open the schedule Properties dialog.– Additionally, you will notice that the dates and times will already be filled in. You can make adjustments in the dialog before clicking the OK button to confirm the schedule settings.

You can add more playlist schedules to the calendar for different



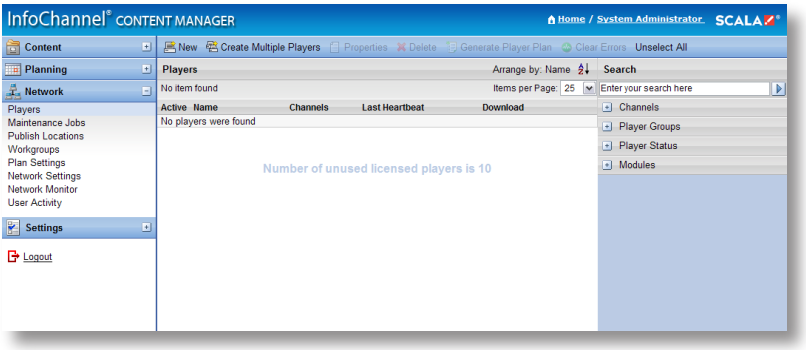


days and/or timeslots by click-dragging out across the calendar grid. When the schedule Properties dialog appears, simply select a different playlist from the selector button at the top of the dialog. Be sure to click the Save button at the top of the panel before exiting to confirm your new schedule settings.



The Network Menu

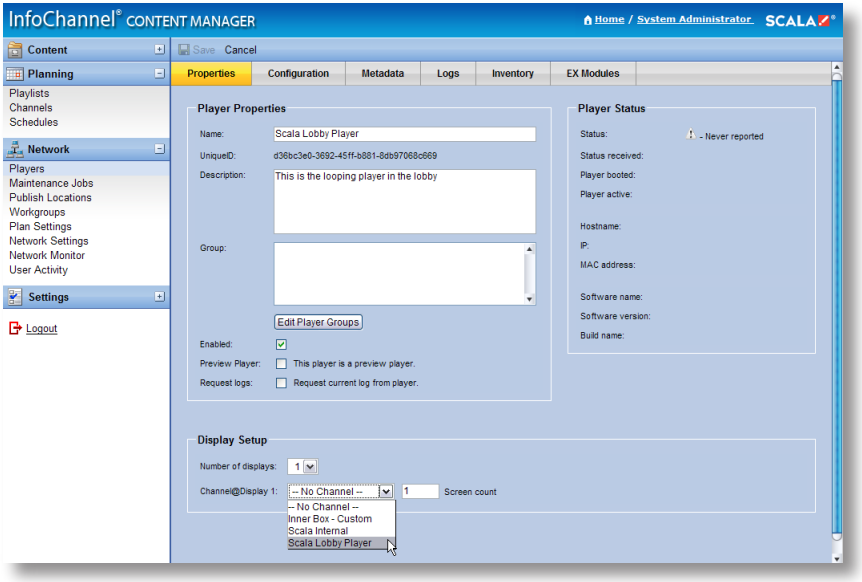
The *Network* menu is where you will define the players where your playlists will be displayed. Additionally, this is where plans are generated (either manually or automatically) which will move the scheduled playlists and media to the player locations; as well as monitor the network activites and the health/status of the players on your network.



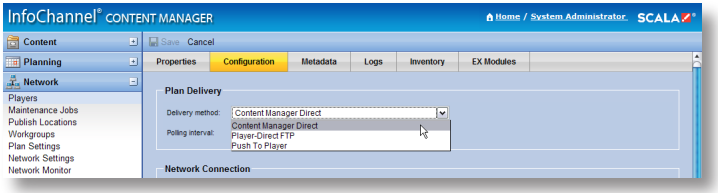
Players

Once you have created channels in Content Manager, you may then create Players to display them. When you create players in Content Manager, they must also be configured on the player computer's side to be able to communicate with the Content Manager. On the player, the Player Configuration utility relies on the correct setup being established in Content Manager, so do this step first. This process is described in further detail in the InfoChannel Player Users Guide.

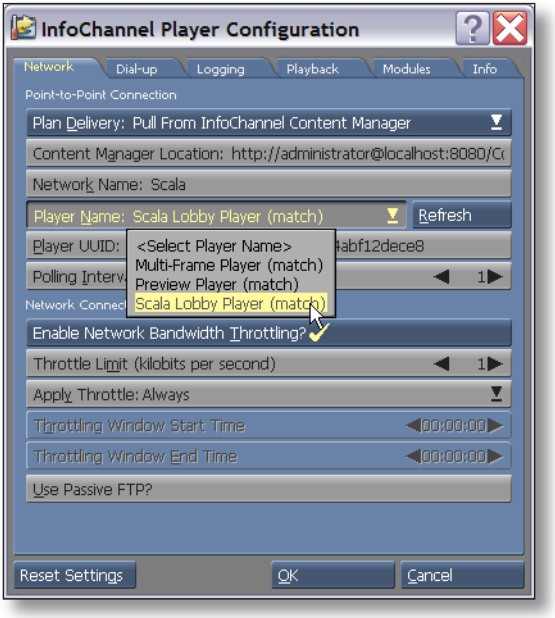
Clicking on the *Players* button will open the Players panel. The first time you open this panel the list of players will be blank so you will have to create one by clicking on the *New* button at the top of the panel. Input the player name and description properties and select a channel where it will play at the bottom of the panel.



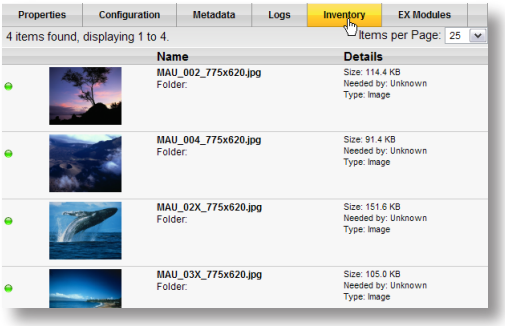
Click the Configuration tab and select which *Delivery Method* you will be using. In this example, the default setting *Content Manager Direct* is applied. This will allow the player to periodically check the Content Manager for updates, and will subsequently download the necessary files. Be sure to click the *Save* button at the top of the panel to retain your new player information and configuration settings.



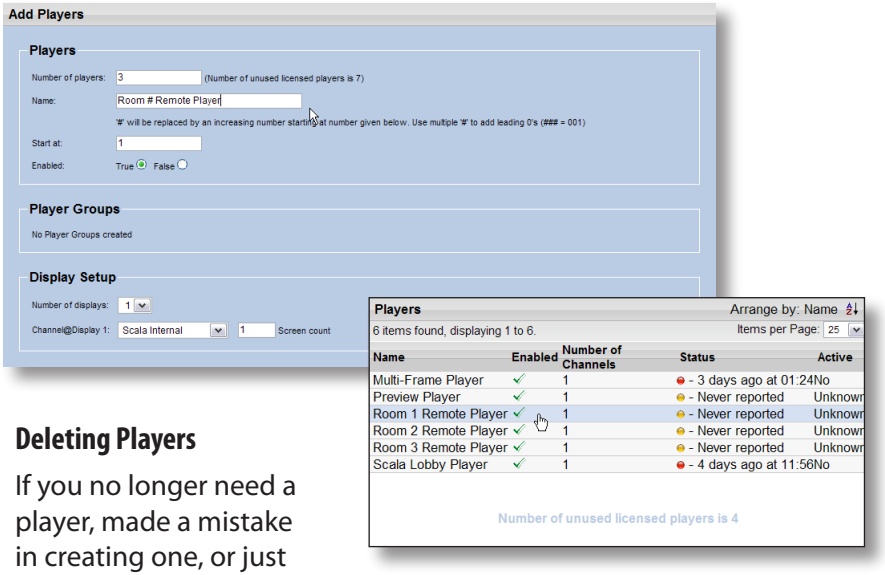
You can check the configuration on your player computer to select the correct player created by Content Manager.



Once your player is actively running and communicating over the network, you will be able to check the player's inventory to view whatever media files and scripts it has downloaded and is currently playing.

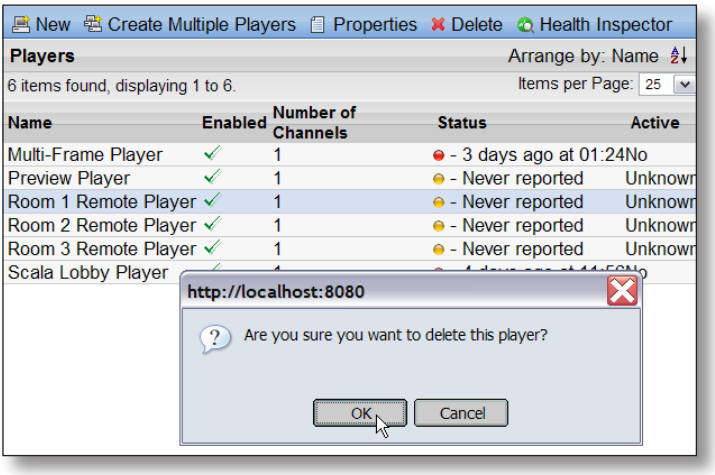


If you have several players that will be receiving the same scheduled playlist through one channel, then you can select the *Create Multiple Players* button at the top of the panel. You can also enter the number of players (up to your maximum allowable per license) and give them a name and description. The name of the player must include a # symbol so it will automatically number each of the individual players for identification purposes. Select the channel from which they will be addressed, and click *Save*.


Add Players
Players
Number of players: 3 (Number of unused licensed players is 7)
Name: Room # Remote Player
'#' will be replaced by an increasing number starting at number given below. Use multiple '#' to add leading 0's (### = 001)
Start at: 1
Enabled: True False
Player Groups
No Player Groups created
Display Setup
Number of displays: 1
Channel@Display 1: Scala Internal 1 Screen count
Players
Arrange by: Name
6 items found, displaying 1 to 6.
Items per Page: 25
Name
Enabled
Number of Channels
Status
Active
Multi-Frame Player 1 - 3 days ago at 01:24 No
Preview Player 1 - Never reported Unknown
Room 1 Remote Player 1 - Never reported Unknown
Room 2 Remote Player 1 - Never reported Unknown
Room 3 Remote Player 1 - Never reported Unknown
Scala Lobby Player 1 - 4 days ago at 11:56 No
Number of unused licensed players is 4

Deleting Players

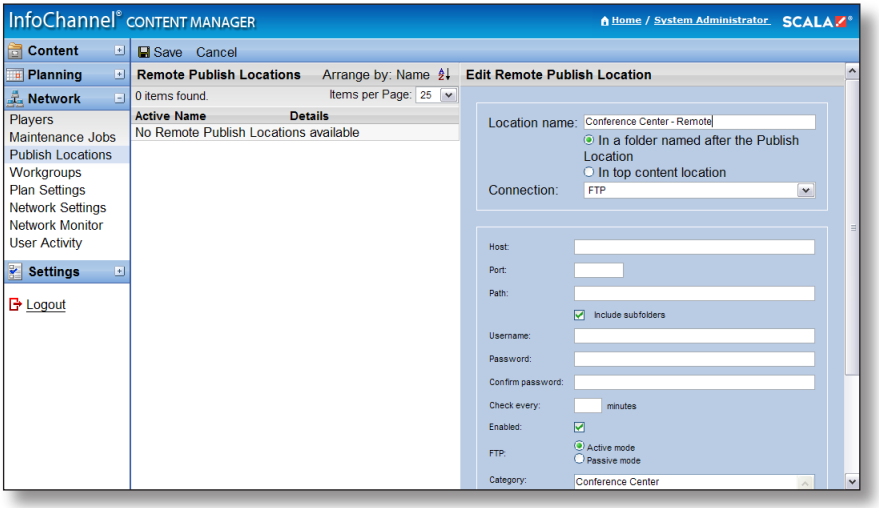
If you no longer need a player, made a mistake in creating one, or just need to free up room for new players, you can simply delete them from the list. Select the player you wish to delete and click the *Delete* button at the top of the panel. A dialog asking you to confirm the deletion will pop-up.



NOTE: Once a player is deleted, new plans will no longer be generated for that player. However, if the player is not decommissioned, the player will continue to play its content for 30 days. After 30 days, the player will no longer play any content until it receives a new plan.

Publish Locations

InfoChannel Content Manager gives you the ability to automatically ingest new content by creating a remote publish location. To view remote publish locations, click *Network* > *Publish Locations.* The remote publish location list will appear:



To add a new Publish Location:

1. Click the *New* button.
2. Under Remote Publish Location Properties, type a name for the Publish Location.
3. Select where the content will be stored in Content Manager from the publish location. Your choices include: *In a folder named after the Publish Location* or *In top content location*.
4. Under Host details, type the base hostname or IP address of the FTP server. I.E. myftpserver.com or 192.168.1.100 (Note: Do not enter ftp:// in either case)
5. Type the *port* number that is used to connect to the FTP server.
6. Type the *path* from the root folder from which the content exists.

7. If you want to include subfolders, check the *Include subfolders* option. Otherwise, uncheck the option.
8. Type the *Username* that is used to access the FTP server.
9. Type the *Password* and *Confirm Password* for the Username specified in step 8.
10. Specify the polling interval using the *Check Every* field (in minutes).
11. Choose *Active mode* or *Passive mode* FTP.
12. Select a Category (if desired).
13. Test the FTP connection by clicking the *Test Connection* button. If the connection fails, please confirm that the settings which you specified are correct.
14. Click the *Save* button to commit your changes.

Once a Publish Location has been created, you can view the status by selecting the publish location, and clicking the *Log* Watcher button.

NOTE: If you delete a media item that was downloaded from a publish location, the next time Content Manager synchronizes with the FTP site, the media item will once again be downloaded. This is an intended behavior.

To edit an existing Publish Location:

1. Select the Publish Location from the list you want to edit.
2. Make the desired changes to the Publish Location.
3. Click the *Save* button.

To delete an existing Publish Location:

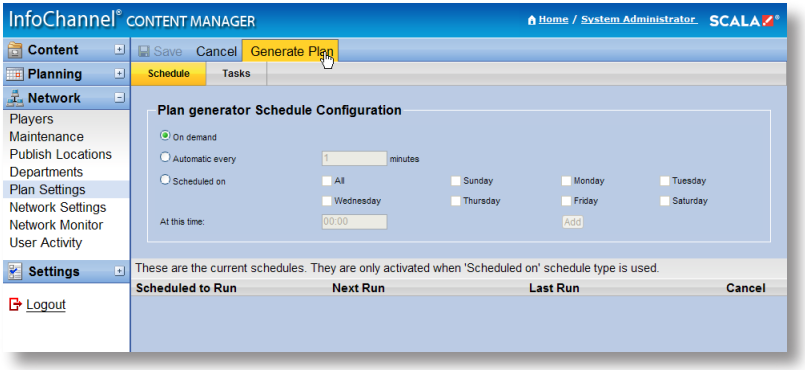
1. Select the Publish Location from the list you want to delete.
2. Click the *Delete* button.
3. Click *OK* in the resulting dialog to delete the Publish Location.

NOTE: The publish location may not be deleted immediately. This is due to the fact that Content Manager may be synchronizing with the FTP site. When Content Manager has aborted the synchronizing process, the publish location will be removed.

Plan Settings/Generate Plan

To send your schedule to the player, you will need to generate a plan. The player will look for new plans to be generated on a predetermined schedule. The player will then download the appropriate media and script files it needs from the server. If media files have not been changed, but only a script change was needed, then the player will only download the new script file.

Select the *Plan Settings* button under the *Network* menu, and it will open the *Plan generator Schedule Configuration* panel. By default the schedule is set to *Automatic Every 10 Minutes*, however, you can manually generate a new plan. Click the *Generate Plan* button at the top of the panel to send it to the player to pick up.



Automatic Every 10 Minutes is the default, however, if you prefer, you may have the player update on a schedule.

3 InfoChannel Content Manager 5
Maintenance, Network Monitoring and Settings

Creating channels and players, organizing and scheduling your media is only the beginning of what InfoChannel Content Manager 5 can do. You also have the unique ability to monitor your network, server and player(s). Additionally, InfoChannel Content Manager provides extensive security and maintenance features.

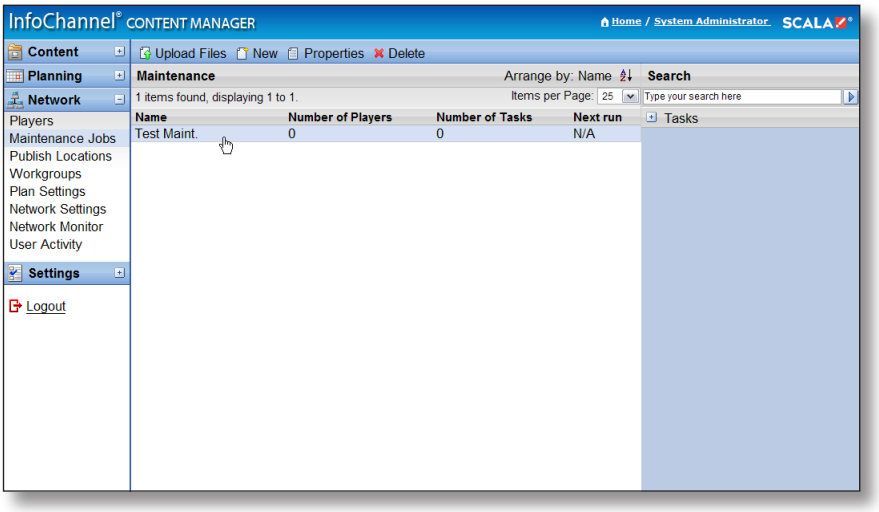
Throughout the following section we will recommend some effective tips in case you run into any unforseen problems with your set-up, installation or configuration.

Maintenance Jobs

InfoChannel Content Manager will allow you to create, edit and delete Maintenance Jobs. Maintenance Jobs provide a way for you to schedule maintenance tasks that the player should perform at a given interval. Installing software updates, retrieving files, and rebooting the computer are just a few of the tasks that can be performed.

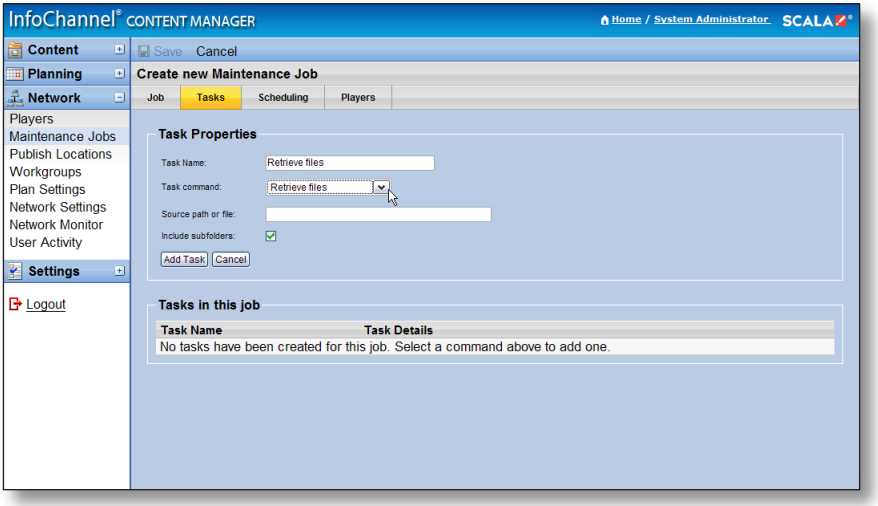
Some tasks initially require that file(s) be uploaded. To upload files, click the *Upload Files* button in the button bar. When launching the *File Uploader* from the Maintenance Job section, the files are stored in a separate location from files which are uploaded from the Media Items or Templates section.

To create or view maintenance jobs, click *Network* > *Maintenance Jobs*. You will see the Maintenance jobs list:



To create a new maintenance job:

1. Click *New* button.
2. Type a *Name* for the job and an optional *Description*.
3. Click the *Next* button.
4. Under *Task Properties* select a *Task Command* from the drop down menu.
5. Depending on the *Task Command that is selected,* various options will become available.



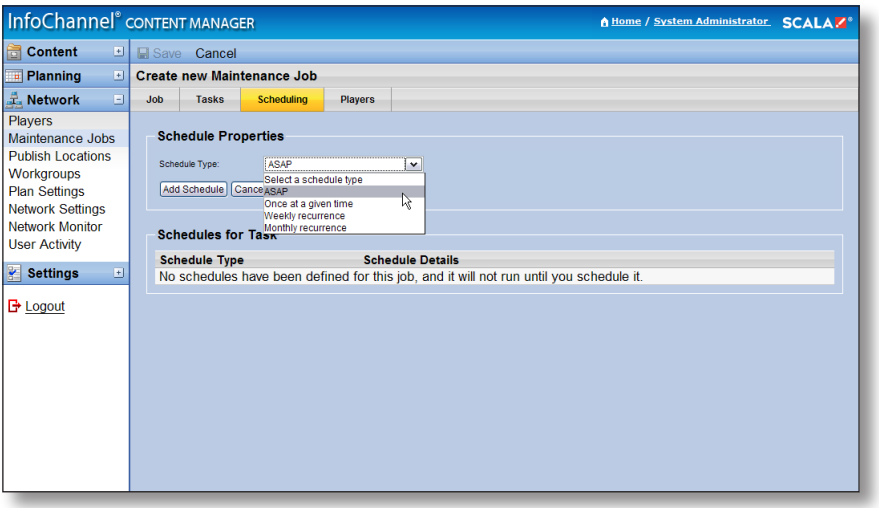
6. When the *Task Properties* options have been completed, click the *Add Task* button.

7. Repeat step 4 - 6 to add additional tasks to the maintenance job.

8. Click the *Scheduling* tab.

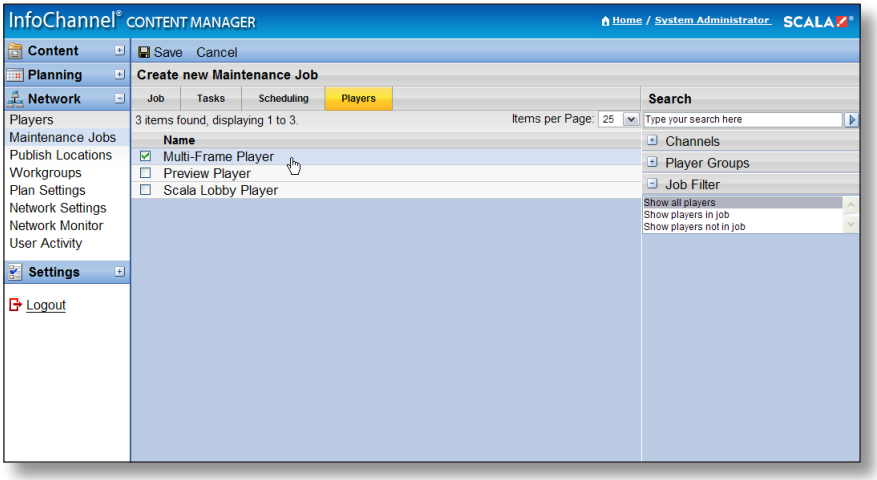
9. Under *Schedule Properties*, select the appropriate option in the *Schedule Type* drop down menu.

10. Click the *Add Schedule* button.



11. Click the *Players* tab.

12. Select the Players for which you want this maintenance job to apply.



13. Click the *Save* button.

To edit an existing Maintenance Job:

1. Select the Maintenance Job from the list you want to edit.
2. Click the *Properties* button.
3. Make the desired changes to the *Properties*, *Tasks*, *Scheduling*, and *Player* tabs.
4. Click the *Save* button.

To delete an existing Maintenance Job:

1. Select the Maintenance Job from the list you want to delete.
2. Click the *Delete* button.
3. Click *OK* in the resulting dialog to delete the Maintenance Job.

Updating InfoChannel Player Software

Software updates are an important step in keeping your players healthy and ensuring any new features are readily supported.

> ***NOTE: Your Scala Advantage contract must be current in order to apply the latest software updates. This is controlled via the software license. To check if your license is current, go to Settings > License Status.***

If your license is current, create a software update job by:

1. Clicking the *Upload Files* button. In the resulting dialog, Click *File* > *Select File(s) to Upload*… Using the Windows file dialog box, browse to the location where the software update exists. Select the file, and click

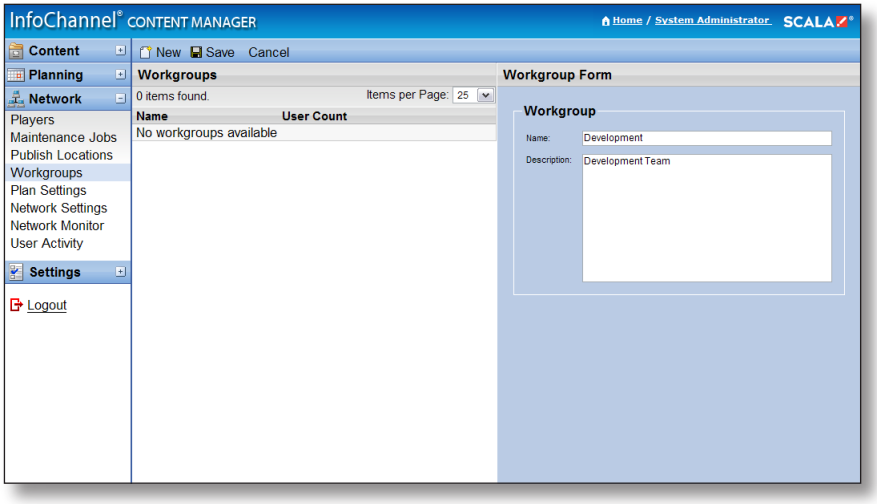
UPLOAD. Once the file has completely uploaded, close the file uploader by clicking the *File* > *Quit*, then click OK to exit the file uploader.

2. Click *New* button.
3. Type a *Name* for the job and an optional *Description*.
4. Click the *Next* button.
5. Under *Task Properties* select *Install software update* from the *Task Command* drop down menu.
6. Select the software update you want to install.
7. If the player is NOT using an account that has administrator privileges, enter account details for a user that does using the *Run as user* and *Run as password* text entry fields.
8. Click the *Add Task* button.
9. Click the *Scheduling* tab.
10. Under *Schedule Properties*, select the appropriate option in the *Schedule Type* drop down menu.
11. Click the *Add Schedule* button.
12. Click the *Players* tab.
13. Select the Players you want to update.
14. Click the *Save* button.

NOTE: The Install Software Update task automatically reboots the player machine. Therefore, you do not need to add a reboot task to the job.

Workgroups

InfoChannel Content Manager will allow you to create, edit and delete Workgroups. Workgroups are a way of associating one or more users to a particular group. Workgroups can then be used for associating content and playlists to a specific group. To view the available Workgroups, click *Network* > *Workgroups* which will bring up the Workgroups list:



To create a new Workgroup:

1. Click the *New* button.
2. Type a *Name* for the Workgroup.
3. Type a *Description* for the Workgroup (optional).
4. Click the *Save* button.
5. Repeat steps 1-4 for additional Workgroups that you want to create.

To edit an existing Workgroup:

1. Select the Workgroup from the list you want to edit.
2. Click the *Properties* button.
3. Edit the *Name* field (if desired).
4. Edit the *Description* (if desired).
5. Click the *Save* button.

To delete an existing Workgroup:

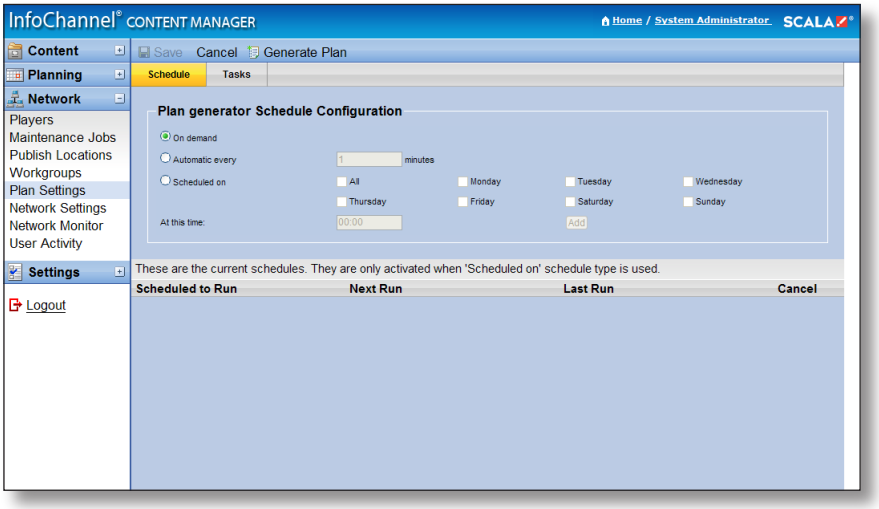
1. Select the Workgroup from the list you want to delete.
2. Click the *Delete* button.
3. Click *OK* in the resulting dialog to delete the Workgroup.

Sub-Workgroups are created in much the same way as Workgroups are created. Allowing Sub-Workgroups provides additional control of your network. To create a Sub-Workgroup:

1. Select the Workgroup in which you want to create a Sub-Workgroup.
2. Click the *New Sub-Workgroup* button.
3. Type a *Name* for the Sub-Workgroup.
4. Type a *Description* for the Sub-Workgroup (optional).
5. Click the *Save* button.
6. Repeat steps 1-5 for additional Sub-Workgroups you wish to create.

Plan Settings

InfoChannel Content Manager can generate new plans for your player(s) automatically, or based on a predefined schedule.

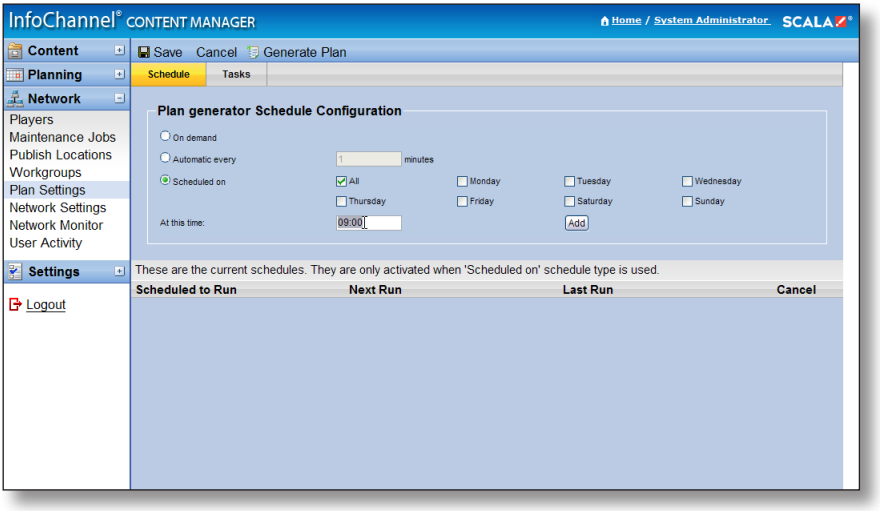


New plans may also be generated manually. To view the plan settings, click *Network* > *Plan Settings*.

In the *Schedule* tab, you can choose the following options:

- *On Demand* – Content Manager will only generate player plans when you click the *Generate Plan* button, or when viewing the Network > Players list, click the *Generate Player Plan* button.
- *Automatic* – Content Manager will generate player plans every *x* number of minutes where *x* is the defined interval in minutes that you choose. By default this option is selected and the defined interval is ten (10) minutes.

- *Scheduled on* – Content Manager will generate player plans based on the scheduled interval that you choose. This interval could be once a day, twice a day, three times a week, etc.



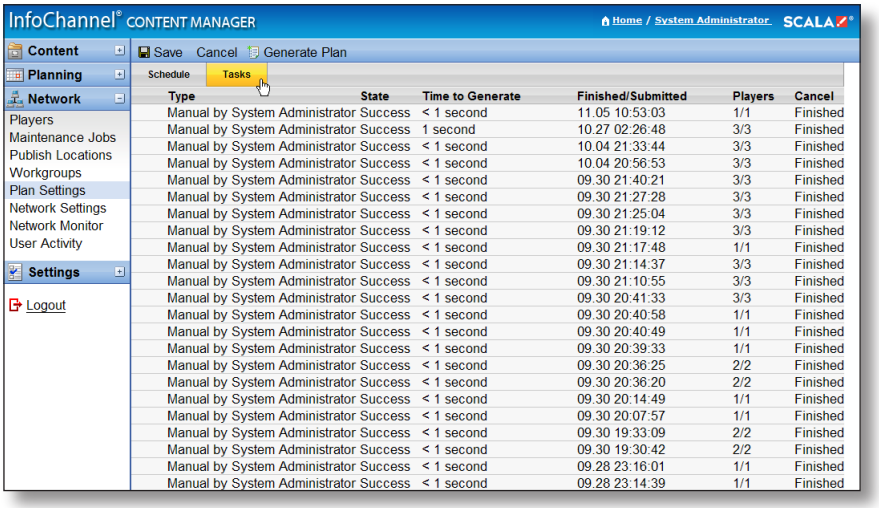
If you make any changes in how the player plans are generated, be sure to click the *Save* button in the button bar so your changes are committed.

> ***IMPORTANT NOTE: InfoChannel Players must receive a valid plan at least once every thirty (30) days. Otherwise, the player will stop playing its content until a new plan has been received.***

By clicking the Tasks tab, you can easily view a list of the most recent to least recent plans that have been generated. You may also view important information such as:

- How the plan was generated (Automatic or Manual).
- When the plan was generated (time).

- How long it took to generate the plan (time).
- Number of players for which the plans were generated.


InfoChannel® CONTENT MANAGER
Home / System Administrator
SCALA
Content
Planning
Network
Players
Maintenance Jobs
Publish Locations
Workgroups
Plan Settings
Network Settings
Network Monitor
User Activity
Settings
Logout
Save
Cancel
Generate Plan
Schedule
Tasks
Type State Time to Generate Finished/Submitted Players Cancel
Manual by System Administrator Success < 1 second 11.05 10:53:03 1/1 Finished
Manual by System Administrator Success 1 second 10.27 02:26:48 3/3 Finished
Manual by System Administrator Success < 1 second 10.04 21:33:44 3/3 Finished
Manual by System Administrator Success < 1 second 10.04 20:56:53 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 21:40:21 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 21:27:28 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 21:25:04 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 21:19:12 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 21:17:48 1/1 Finished
Manual by System Administrator Success < 1 second 09.30 21:14:37 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 21:10:55 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 20:41:33 3/3 Finished
Manual by System Administrator Success < 1 second 09.30 20:40:58 1/1 Finished
Manual by System Administrator Success < 1 second 09.30 20:40:49 1/1 Finished
Manual by System Administrator Success < 1 second 09.30 20:39:33 1/1 Finished
Manual by System Administrator Success < 1 second 09.30 20:36:25 2/2 Finished
Manual by System Administrator Success < 1 second 09.30 20:36:20 2/2 Finished
Manual by System Administrator Success < 1 second 09.30 20:14:49 1/1 Finished
Manual by System Administrator Success < 1 second 09.30 20:07:57 1/1 Finished
Manual by System Administrator Success < 1 second 09.30 19:33:09 2/2 Finished
Manual by System Administrator Success < 1 second 09.30 19:30:42 2/2 Finished
Manual by System Administrator Success < 1 second 09.28 23:16:01 1/1 Finished
Manual by System Administrator Success < 1 second 09.28 23:14:39 1/1 Finished

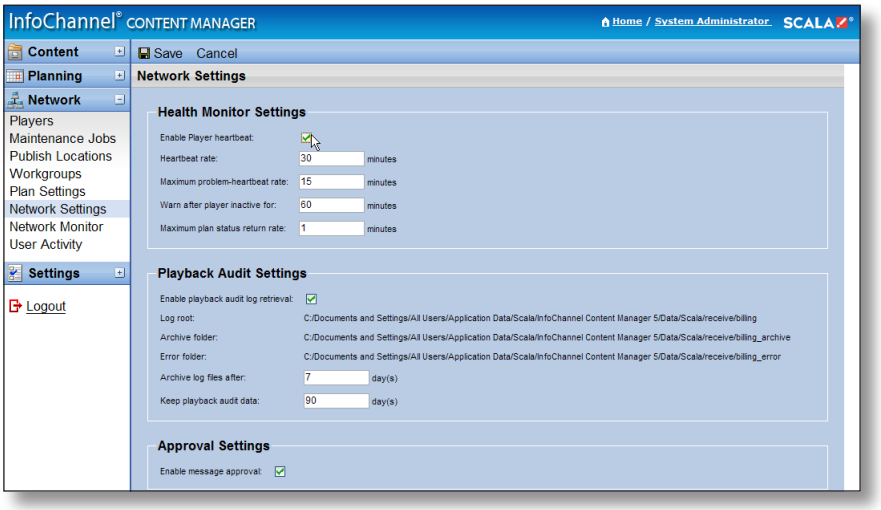
Network Settings

InfoChannel Content Manager allows you to view and modify various settings for your InfoChannel Network. Click on *Network* > *Network Settings* to view the six groups of settings.

If you make any changes, be sure to click the *Save* button in the button bar so your changes are committed.

Health Monitor Settings

You can enable or disable Health Monitoring for your InfoChannel Network. By checking the *Enable Player Heartbeat* option, health monitoring will be enabled. If you uncheck the option, health monitoring will be disabled.

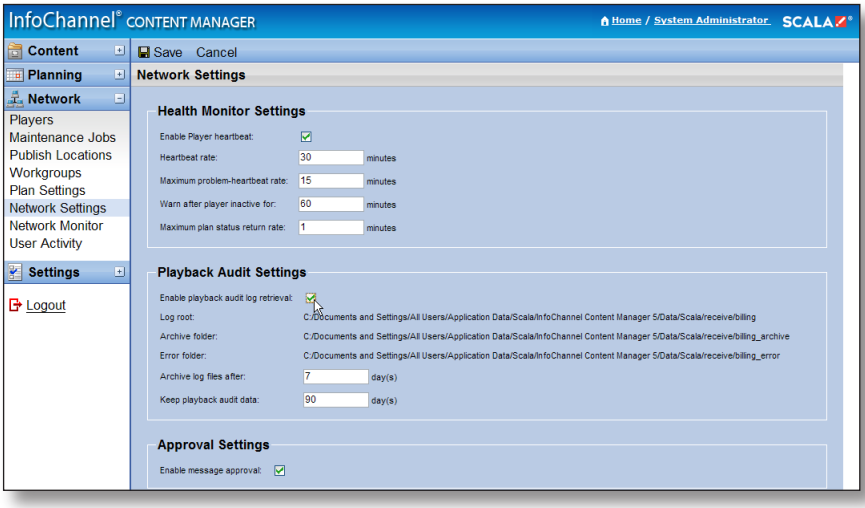


When *Enable Player Heartbeat* is checked, you can change the following settings:

- *Heartbeat Rate* – How often the player should send a heartbeat to Content Manager. The default value is thirty (30) minutes.
- *Maximum Problem-heartbeat rate* – How often the player is allowed to send a problem heartbeat to Content Manager. The default value is fifteen (15) minutes.
- *Warn after player inactive for* – How long Content Manager waits before warning that a player is inactive. The default value is sixty (60) minutes.
- *Maximum plan status return rate* – How often the player is allowed to send the plan status. The default value is one (1) minute.

Playback Audit Settings

You can enable or disable playback audit log retrieval on your InfoChannel Network. By checking the *Enable playback audit log retrieval* option, player(s) will automatically upload their playback audit logs everyday. If you uncheck the option, the playback audit logs will not be uploaded automatically.



When *Enable playback audit log retrieval* is checked, you can change the following settings:

- *Archive log files after* – When should Content Manager archive the playback audit files. The default value is seven (7) days.
- *Keep playback audit data* – How long should Content Manager keep the playback audit logs. The default value is thirty (30) days.

The *Log root, Archive folder, and Error folder* cannot be changed. The values shown are the full windows path to the directory that contains the log files.

Approval Settings

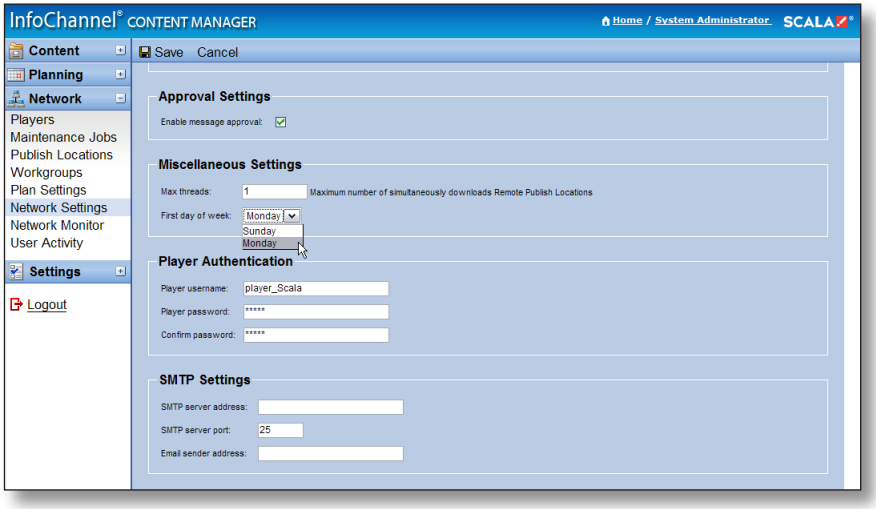
You can enable message approval by checking the *Enable message approval* option. When enabled, you can request approval of messages before they are shown on a player. If the option is not enabled, then the messages will not require approval before being shown on a player.

Miscellaneous Settings

The miscellaneous settings allows for further customization of InfoChannel Content Manager.

- *Max Threads* – The maximum number of threads that are available for use to download from a remote publish location. The default value is one (1). If you change this setting, you **MUST** stop/start the Apache Tomcat service in order for the new setting to take effect.

- *First day of week* – Allows you to select the first day of the week. The two choices are Sunday or Monday. The default value is Sunday.



Player Authentication

The player authentication settings are the username and password that your player(s) should use when connecting to InfoChannel Content Manager for their plan files.

- *Player username* – The username player(s) use to connect to Content Manager. The default value is *player_<networkname>*.
- *Player password* – The password player(s) use to connect to Content Manager. The default value is *scala*.
- *Confirm password* – Requires you to re-enter a password for confirmation. The default value is *scala*.

SMTP Settings

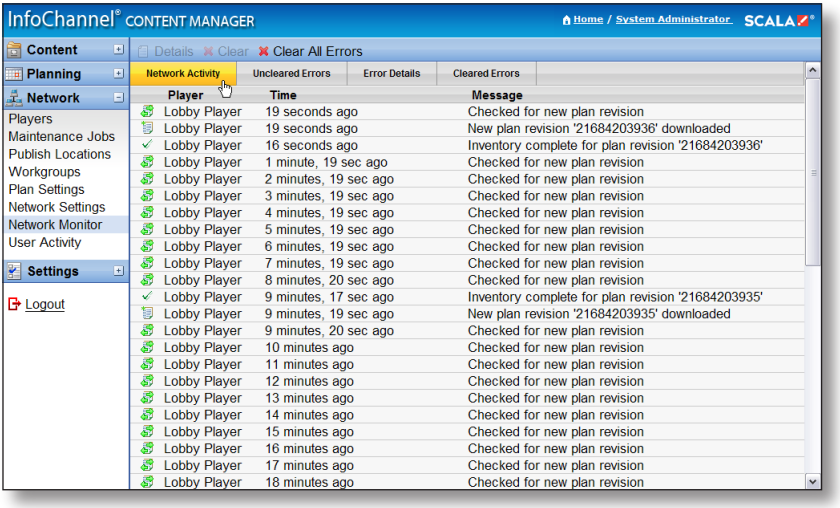
The SMTP settings allow you to configure Content Manager to use a mail server to send you an email when a problem occurs. The settings are:

- *SMTP server address* – The IP address or machine name of the SMTP server you want to use.
- *SMTP server port* – The port of the SMTP server. The default value is twenty-five (25).
- *Email sender address* – The email address that will appear in the *From* line of the email.

Network Monitor

InfoChannel Content Manager allows you to closely monitor the activity on your InfoChannel Network. The *Network Monitor* can tell when a player has received a plan, downloaded media files, as well as each time it checks in for new content or plans.

You can also view and clear any errors which may have occurred on a player. Click on *Network* > *Network Monitor* to view *Network Activity*.


InfoChannel CONTENT MANAGER
Home / System Administrator
SCALA
Content
Planning
Network
Players
Maintenance Jobs
Publish Locations
Workgroups
Plan Settings
Network Settings
Network Monitor
User Activity
Settings
Logout
Details
Clear
Clear All Errors
Network Activity
Uncleared Errors
Error Details
Cleared Errors
Player
Time
Message
Lobby Player 19 seconds ago Checked for new plan revision
Lobby Player 19 seconds ago New plan revision '21684203936' downloaded
Lobby Player 16 seconds ago Inventory complete for plan revision '21684203936'
Lobby Player 1 minute, 19 sec ago Checked for new plan revision
Lobby Player 2 minutes, 19 sec ago Checked for new plan revision
Lobby Player 3 minutes, 19 sec ago Checked for new plan revision
Lobby Player 4 minutes, 19 sec ago Checked for new plan revision
Lobby Player 5 minutes, 19 sec ago Checked for new plan revision
Lobby Player 6 minutes, 19 sec ago Checked for new plan revision
Lobby Player 7 minutes, 19 sec ago Checked for new plan revision
Lobby Player 8 minutes, 20 sec ago Checked for new plan revision
Lobby Player 9 minutes, 17 sec ago Inventory complete for plan revision '21684203935'
Lobby Player 9 minutes, 19 sec ago New plan revision '21684203935' downloaded
Lobby Player 9 minutes, 20 sec ago Checked for new plan revision
Lobby Player 10 minutes ago Checked for new plan revision
Lobby Player 11 minutes ago Checked for new plan revision
Lobby Player 12 minutes ago Checked for new plan revision
Lobby Player 13 minutes ago Checked for new plan revision
Lobby Player 14 minutes ago Checked for new plan revision
Lobby Player 15 minutes ago Checked for new plan revision
Lobby Player 16 minutes ago Checked for new plan revision
Lobby Player 17 minutes ago Checked for new plan revision
Lobby Player 18 minutes ago Checked for new plan revision

Network Activity

The *Network Activity* tab gives you the ability to see exactly what your player(s) have been recently uploading and downloading. The list currently contains a maximum of fifty (50) entries. There are four columns that show this information.

- *Icon* – This column reveals a visual representation of the action that has occurred. A few samples are : Checked Plan, Heartbeat, and New Plan
- *Player* – This column lists the player name as defined in the Network > Players list.
- *Time* – This column lists how recently the specific event occurred.

- *Message* – This column lists a text based message of the action that has occurred.

Player Health

Once you have a Player configured and running a scheduled plan, you will be able to monitor the player's "health" and network activity. You can configure the player to send a "heartbeat" at predetermined intervals so the system will recognize that it is still operating efficiently.

If the player does not send a heartbeat signal at a pre-determined time, an optional email can be sent to one or more users. You could then create a new maintenance task, for instance, to reboot the player.

Uncleared Errors

The *Uncleared Errors* tab lists every error that has not been cleared from InfoChannel Content Manager. To view more details about an error, select the error, and click the *Details* button or the *Error Details* tab.

To clear an error, select the error and click the *Clear* button. Note that clearing the errors in Content Manager does not fix the error which has occurred with the player. It simply removes the item from the *Uncleared Errors* list. You must resolve the problem on your player, otherwise the problem will reappear in Content Manager at a later time.

To clear all errors, click the *Clear All Errors* button.

Error Details

The *Error Details* tab contains detailed information about an error that has occurred on one or more players. This information should be used to diagnose a problem with a player on your network. An error detail contains:

- *Error* – The type of error that has occurred.
- *Error Number* – The error number with which the error is associated.
- *Problem number* – The problem number with which the error is associated.
- *Problem description* – A simple description of the error.
- *Technical information*– Detailed information about the error. This information is very useful when contacting Scala Technical Support.

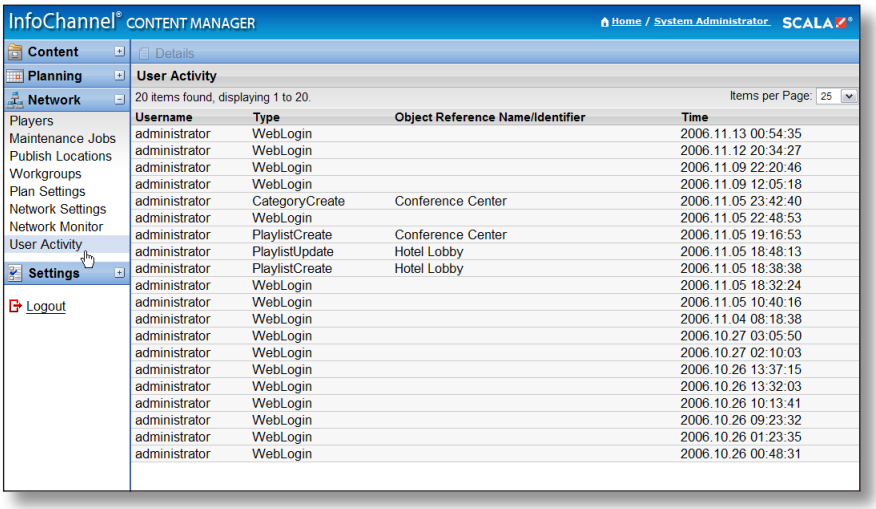
Cleared Errors

The *Cleared Errors* tab lists all errors that have been cleared using the *Clear or Clear All Errors* button(s) in the *Network* > *Network Monitor* menu or the *Clear Errors* button in the *Network* > *Players* menu.

User Activity

InfoChannel Content Manager logs when any user has logged into the web interface. It also logs any changes that may have occurred. Click on *Network* > *User Activity* to view the list. This list contains four columns:

- *Username* – The username of the person.
- *Type* – The type of action that was performed.
- *Object Reference Name/Identifier* – The object that was changed.
- *Time* – The time the action was performed.



Personal Settings

InfoChannel Content Manager will allow you to modify the personal settings of the current user. Click on Settings > Personal Settings to view or edit the options.

Personal Information – You can change the following personal information associated with your account:

- Firstname – You can change your first name.
- Lastname – You can change your last name.
- Email – You can change your email address.

Change Password – You can modify your existing password by selecting the *Change my password* checkbox. To change your password simply enter *Old password*, *New password* and *confirm*.

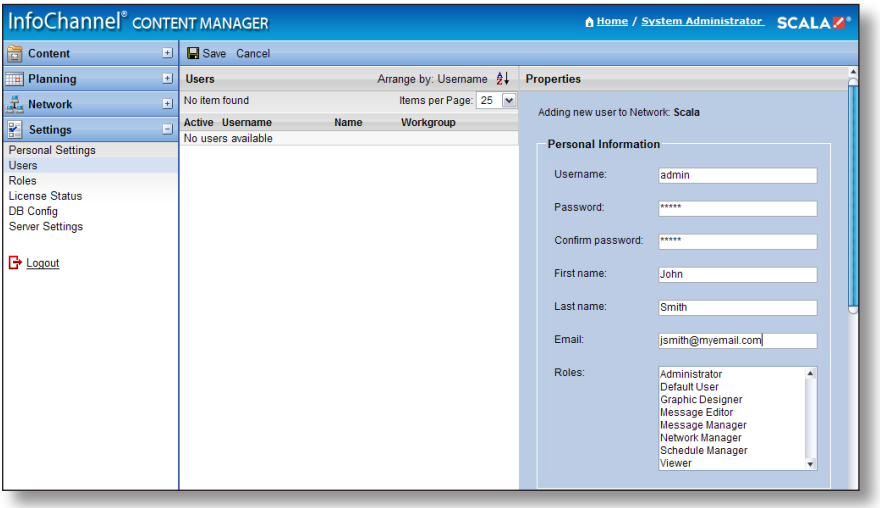
Regional Settings – You can modify the look and feel of selected regional settings.

- Default Language – Select the language which is appropriate for you.
- Date format – Select how you prefer to have the date format presented.
- Clock – Select between 12 hour and 24 hour formats.

If you make any changes, be sure to click the *Save* button in the button bar so your changes will be committed.

Users

InfoChannel Content Manager will allow you to create, edit and delete users. User management is important because it gives you the ability to control whomever has access to your resources. Using the left menu, click on Settings > Users to view users. You will see the users list appear.



To create a new user:

1. Click the *New* button.
2. Type a *username* for the user.
3. Type a *password* for the user.
4. Retype the password for *confirm password*.
5. Type a *firstname* for the user.
6. Type a *lastname* for the user.
7. Type an *Email* address for the user.
8. Select one or more *Roles* appropriate for that user.
9. Select a *Workgroup* (if applicable).
10. Change any of the *Regional Settings* (if necessary).
11. Change any of the *Miscellaneous Settings* (if necessary).
12. Click the *Save* button.
13. Repeat steps 1-12 for any additional users you want to create.

To edit an existing user:

1. Select the user from the list you want to edit.
2. Click the *Properties* button.
3. Edit the *Name* field (if desired).

4. Modify the role's *Personal Information, Workgroups, Regional Settings and Miscellaneous Settings* as necessary.

5. Click the *Save* button.

To delete an existing user:

1. Select the user from the list you want to delete.

2. Click the *Delete* button.

3. Click *OK* in the resulting dialog to delete the user.

Roles

InfoChannel Content Manager allows you to create, edit and delete roles. Using the left menu, click on Settings > Roles to view roles. By default there are seven existing roles. Once created, roles can be associated to one or more users.

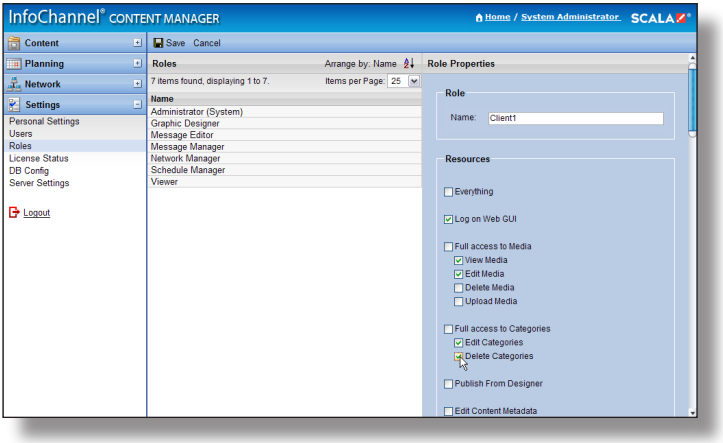
To create a new role:

1. Click the *New* button.

2. Type a *Name* for the role.

3. Select the *Resources* appropriate for that role.

4. Click the *Save* button.



5. Repeat steps 1-4 for any additional roles you want to create.

To edit an existing role:

1. Select the role from the list you want to edit.
2. Click the *Properties* button.
3. Edit the *Name* field (if desired).
4. Modify the role's *Resources* as necessary.
5. Click the *Save* button.

To delete an existing role:

1. Select the role from the list you want to delete.
2. Click the *Delete* button.
3. Click *OK* in the resulting dialog to delete the role.

NOTE: All roles can be deleted except the Administrator (System) role.

License Status

InfoChannel Content Manager will allow you to view/update the InfoChannel Content Manager license via the License status page. Click on Settings > License Status to view the current license. For more information about product licensing and installing a new license, please refer to the InfoChannel Content Manager quick start guide.

DB Config

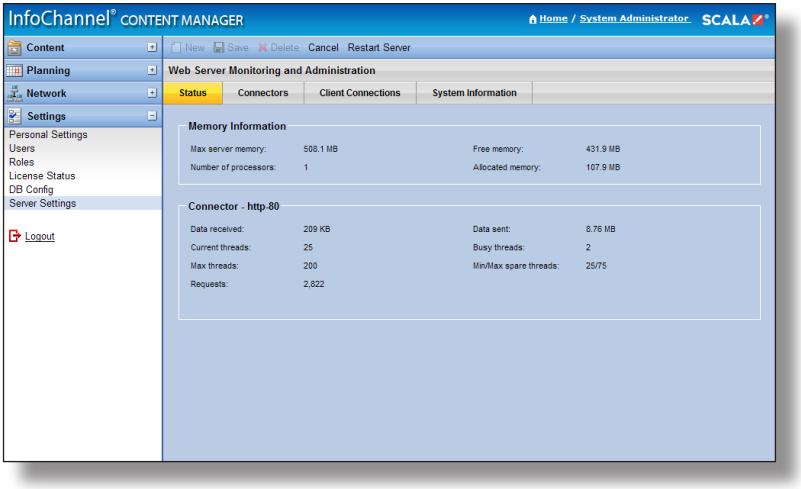
InfoChannel Content Manager will allow you to view/modify the current database configuration. Click on Settings > DB Config to view the current database configuration. These settings were setup the first time that InfoChannel Content Manager was run. Please refer to the InfoChannel Content Manager quick start guide for more information.

Important Note: By changing any of the database settings, you will modify your existing installation. If you do not understand the configuration options, please consult your Nework Administrator.

Server Settings

InfoChannel Content Manager Server settings are not editable. These settings are shown for information purposes only.

Status

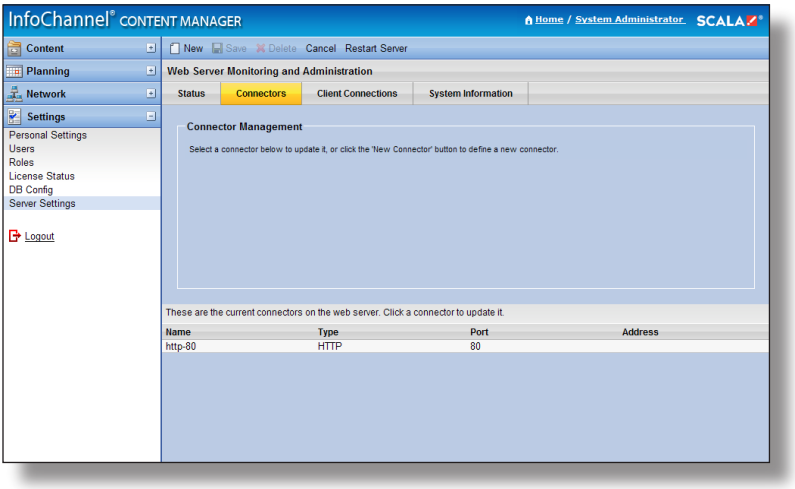


The server settings status page show various information about Content Manager's memory usage and connection details.

- *Max server memory:* - The maximum amount of memory available to the Java Virtual Machine.
- *Free memory:* - The amount of free memory within the Java Virtual Machine.
- *Number of processors:* - The number of processors available to the Java Virtual Machine.
- *Allocated memory:* - The amount of memory currently allocated by the Java Virtual Machine.
- *Data recieved:* - The total amount of data received on the connector since it was started.
- *Data sent:* - The total amount of data sent from the connector since it was started.
- *Current threads:* - The number of threads in the thread pool for the connector.

- *Busy threads:* - The number of threads that are busy processing requests for the connector.
- *Max threads:* - The maximum number of threads allowed for the connector.
- *Min/Max threads:* - The minimum and maximum number of spare threads in the thread pool for the connector.
- *Requests:* - The total number of requests processed by the connector since it was started.

Connectors



When you install Content Manager, a HTTP connector is created. To edit the default connector, select it. You can then edit certain settings:

- *Port number* - The port number the connector will bind to. You can only bind one connector to each port on each IP address.
- *Max threads* - Enter the maximum number of concurrent threads this connector can use. The connector will not

be able to serve more simultaneous requests than it has threads. The default vale is 150. You should set this based on how many player are directly connected to Content Manager. To ensure stable content delivery this value should be set to about 4/3 the number of connected players. Specifying a value of more than 1.000 has little effect on Windows Operating systems, because there is a limit to the number of threads available to each process.

- *Max keep alive* - Enter the maximum number of requests that can be kept alive waiting for subsequent requests on this connector. The default is 100, and a value of 1 disables this setting. Generally Scala recommends disabling this setting on networks with more than 50 players.
- *Min spare threads* - Enter the minimum number of spare threads for the thread pool on this connector. This setting is the number of threads that are available to serve requests when they arrive. The default value is 4. If your network contains more than 50 players, this setting should be set to 25.
- *Max spare threads* - Enter the maximum number of spare threads for the thread pool on this connector. This setting is the maximum number of idle threads that can live in the pool before the server begins to close them. The default value is 50. If your network contains more than 50 players, this setting should be set to 100.
- *Enable lookups* - If enabled, Tomcat wil attempt to resolve the hostnames of clients (such as players). Enabling this setting can negatively affect performance.
- *No TCP delay* - If enabled, this setting generally improves performance.

If you edit any of the connector settings, make sure to click the *Save* button. Then click the *Restart Server* button to use your new settings.

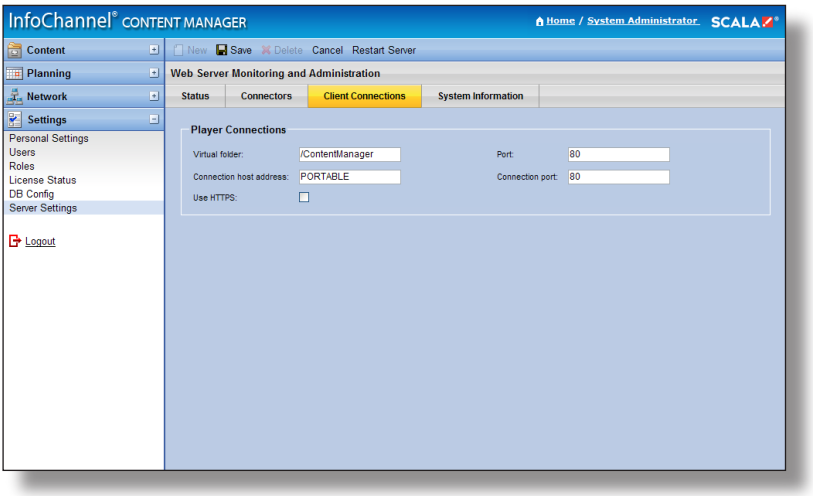
You can create new connectors by using the *New* button. If you want to create a new HTTPS connector, refer to Chapter 4.

Additional settings are available for HTTPS connectors. Please refer to Chapter 4 for more information.

Client Connections

IMPORTANT: If you make any changes to the client connections, your player(s) might not be able to connect back to Content Manager. Meaning that you will need to reconfigure any existing players in the field to use the new settings!

When you install Content Manager, the client connection settings are pre-configured. If you want to change them post installation, go to *Settings -> Server Settings* and click the *Client Connections* tab. You can then edit certain settings:



- *Virtual Folder:* - The virtual folder is the path that Content Manager uses within the webserver. For example, the full path after the hostname and port would be:

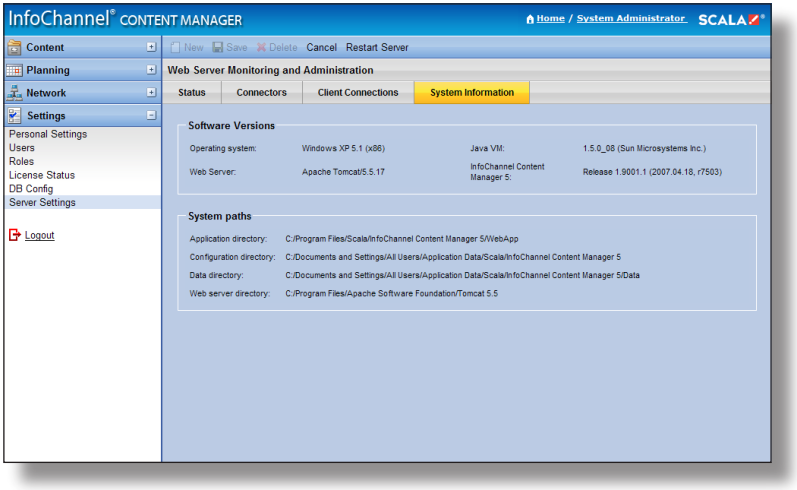
www.myhost.com:8080/VirtualFolder

- *Port:* - The port number the Content Manager will listen for requests.
- *Hostname:* - The hostname the Content Manager will tell players to connect to..
- *Connection port*: - The port number the Content Manager will tell players to connect to. If you are using port-forwarding, you can specify a different port.
- *Use HTTPS:* Refer to Chapter 4 for more information about this setting.

Any changes that you make need to be saved by clicking the *Save* button. Once any changes are made Scala recommends that you click the *Restart Server* button.

System Information

The system information tab shows various other information about where Content Manager is installed.



Software Versions

Operating System - Operating system version and architecture.

Java VM - Java virtual machine version.

Web server - Apache Web server version.

InfoChannel Content Manager 5 - Content Manager version.

System Paths

Application directory: - The path on the server to the directory where the Content Manager web application is installed.

Configuration directory: - The path on the server to the directory where the Content Manager configuration files are stored.

Data directory: - The path on the server to the directory where the Content Manager data directory is located.

Web server directory: - The path on the server to the directory where the Apache Tomcat web server is installed.

Firewalls and Security

Almost all data transferred in an InfoChannel 5 network uses HTTP. When Content Manager is installed, by default, port 8080 will be used. If you choose the default port you must ensure that port 8080 is open between your Content Manager and Player machines. If you specified another port as part of the installation process, please be sure that the port is available.

If you are using Windows XP or Windows 2003, Microsoft enables a software firewall by default. However, as part of the installation process, the installer asks you if its okay to add certain exclusions to the Microsoft software firewall. If you chose not to do so, you must add those exclusions manually.

Otherwise your player(s) will not be able to communicate with Content Manager. For more information, please consult Microsoft's Windows Firewall documentation.

Many Anti-Virus packages also install (or have available) a software firewall, You must be sure that the Anti-Virus software firewall also allows your network traffic to pass through.

NOTE: The FTP protocol is only used when you specify Player-Direct FTP. This option applies for both Content Manager and Player. If you are not using this plan delivery type, then you do not have to add exceptions for FTP.

4 InfoChannel Content Manager 5
Advanced Features

Uploading media, creating playlists and scheduling is only the beginning of what InfoChannel Content Manager 5 can do. In this chapter we will cover some of the advanced features available.

Triggers

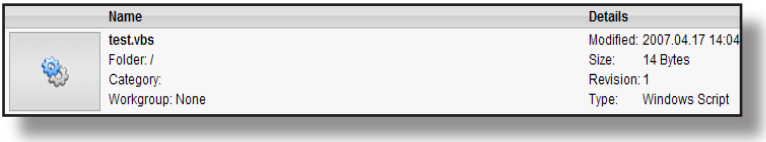
Triggers is a way to define, in InfoChannel Content Manager 5, a specific playlist for a player to start playing when some external input happens. This input comes from Control Scripts, like a VBScript that monitors a file or controls an external device through a serial port. The options are unlimited.

Control Scripts

Control scripts are VBScripts, JScripts or Python Scripts that are created using third party tools, specifically for the purpose of managing external conditions that you want, at times, to interrupt the normal playback of a frame in your channel. Once written, these must be uploaded to Content Manager. To upload a Control Script, go to *Content->Media*. Click the *Upload Files* button to launch the Scala File Uploader. Once the File Uploader has started, you can upload files by either dragging the control script(s) into the File Uploader window or by clicking

File->Select File(s) to Upload...

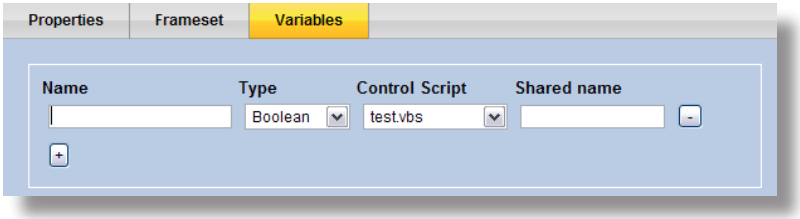
Once your Control Scripts are uploaded, they appear in the Media list tagged with *Type: Windows Script*. You can view all control scripts by expanding the File Type filter under the search text entry box and selecting the Windows Script entry. A typical control script looks like this:



Once you have a control script uploaded, you can then assign the control script to one or more channels by defining channel variables.

Channel Variables

Channel Variables is the way to link a control script to a channel. To access Channel Variables, go to *Planning-> Channels*. Select the Channel you want to add a channel variable to, and click the *Variables* tab. Click the plus button under Name heading to create a new channel variable. You see this form:



This form allows you to do the following:

Name - Set a name for the Channel Variable. This name must be unique, and is automatically prepend with "Channel".

Type - Select the variable type you want to use. This can be either Boolean, Integer or String. Note that currently only

Boolean and Integers can be used to trigger playlists. However, you can also share String variables between your Control Script(s) and Scala.

Control Script - Content Manager automatically lists all Control Scripts that have been uploaded. Select the Control Script you want to be associated with this channel variable.

Shared name - The name by which your Control Script will see and be able to modify this Channel Variable. It will initially be filled in automatically with the text used in the Name field (except it will not have the "Channel." prefix - periods are not allowed in variable names), but it can be anything you want. The important part is that it must match the name of a variable used inside the Control Script.

More than one Channel Variable can be linked to the same Control Script. Simply choose the same Control Script for each Channel Variable. Note that in this case, only one Control Script will be run.

Once you have added one or more variables to your channel, make sure you click the *Save* button to keep your changes.

Playlists to be Triggered

Playlists to be triggered are no different that regular playlists. However, when you created your playlists, they might not have met the criteria that is now needed. A playlist to be triggered is special because it only plays when a channel variable is changed.

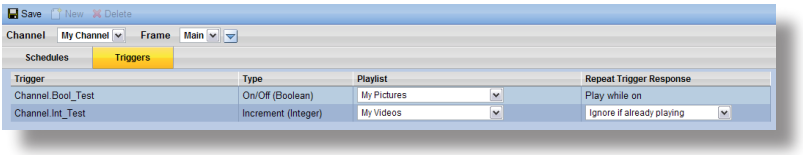
It is recommended that you create any playlists to be triggered now (before moving on to the next section). You might also

want to prepend the name of any these playlists with "Trigger" so they can be identified easier.

Once you have a playlist created, you can now configure it to play when the channel variable you set up is changed by your control script.

Setting up a Trigger

Once you have uploaded your control scripts, setup your channel variables and created any additional playlists, the next step is to configure what playlist plays when a channel variable is changed. You do this by going to *Planning -> Schedules*. Select the Channel you created the Channel Variables for, then click the *Triggers* tab to view the triggers form. Below is an example that uses two channel variables (one of each type - boolean and integer):



Under each heading, you see the variable(s) details listed. Based on the variable type, certain options can be changed.

Triggering on Boolean Variables

For boolean channel variables, the only option that can be changed is Playlist. Here you select a playlist to play when the Control Script changes the boolean value from false to true (or 0 to 1). Notice that under the heading *Repeat Trigger Response,* the value is set to *Play while on*. This means that the playlist specified will continue to play in a loop until the control script changes the channel variable back to false or 0. At that point the playlist is ended immediately, and the player goes back to playing its regular timeslot.

Triggering on Integer Variables

Like boolean channel variables, you can select the playlist that will play when the control script has changed the channel variable. However, any change in the value causes the playlist to start, and the player goes back to playing its regular timeslot after the playlist has played a single time.

The *Repeat Trigger Response* option is available to control what happens if a trigger happens again while the playlist is playing. You have four choices:

Ignore if already playing - The player ignores any changes to the channel variable and continues to play the playlist to completion.

Restart upon change - The player will restart the playlist from the beginning and attempt to play until completion every time the channel variable is changed.

Loop until unchanged - If one or more triggers happen before the playlist ends, then the playlist loops once instead of ending. Triggers in subsequent loops follow the same logic.

Loop once per change - For each trigger that happened while the playlist is playing, another loop of the playlist is added.

Once any changes are made be sure to click *Save* to keep those settings.

A Simple Trigger Example

To see the benefits of using triggers, follow these instructions to setup a trigger:

Configure a player to play back in One Channel (Window) mode. This is necessary as the example uses Windows message boxes.

Open notepad and type:

```
Do
  result = msgbox ("Play Trigger Playlist?", vbYesNo)
  If (result = 6) Then
    MyTrigger = True
    msgbox ("Press OK to stop Trigger Playlist from playing.")
    MyTrigger = False
  Else
    MyTrigger = False
  End If
Loop
```

Save the file as *MyControlScript.vbs*

Upload the file to Content Manager using the File Uploader in the Media items list.

Go to *Planning -> Channels*. Select a channel you want to use for this example, then click the *Variables* tab.

In the name field, type *MyTrigger*. This should automatically change the Name to *Channel.MyTrigger*, and the Shared name should be *MyTrigger*.

Leave the *Variable Type* as Boolean. Select the MyControlScript.vbs file you uploaded in step 4 as the *Control Script*.

Click *Save*.

Go to *Planning -> Schedules*. Select the channel you added the channel variable *MyTrigger* for, then click the *Triggers* tab.

Select a playlist to play when the channel variable MyTrigger is set to true.

Click *Save*.

Generate a plan for the player.

Once the player has received the plan, and has downloaded all of the necessary content, you will see a Windows dialog box on screen. If you want to play the trigger playlist (that was specified in Step 10) click *Yes*. To stop playing the trigger playlist

while it is playing, click *OK*. To stop the player, select the player window and press ESC or click the window close button.

Non-Scheduled Content

Non-scheduled Content is a way for you to deliver content to one of more channels independently of any playlist. This is useful for many reasons:

You want to deliver a file or files that will be updated independently from a ScalaScript.

You want to deliver a file or files ahead of time that you know your players will need in the future.

You want to deliver a file or files that are used by a VBScript or another scripting language that are not used in any playlist.

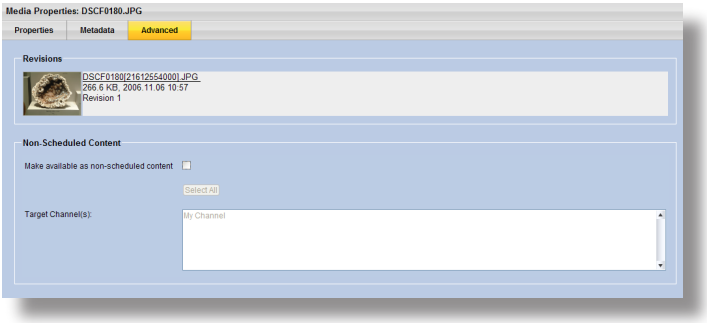
These are just a few of the reasons why this feature can be useful.

To mark a media item as non-scheduled content, follow these steps:

Go to *Content -> Media*

Select a media item that you want to mark as non-scheduled content, and click *Properties*.

Click on the *Advanced* tab. You see this form:



Under the Non-Schedule Content section, click the *Make available as non-scheduled content* checkbox.

Click the *Select All* button to select all the **CURRENT** channels, or select each individual channel in the target channels list.

Click *Save* to keep your changes.

In order for your channels to pickup any newly marked non-scheduled content, you must generate a plan for any of the players that use that channel.

A couple of important points:

If you add a new channel **AFTER** you mark a piece of media as non-scheduled content, and you want the newly added channel to receive any of the non-scheduled content, you will need to edit the media item and add the new channel to the target channel list.

All non-scheduled content is delivered to the players using the same folder layout that exists in Content Manager. Meaning that if you uploaded a media item to a sub-folder called images, when the player downloads that media item, the player will store it in the folder: Content:\images. This is important because if you are using Designer to setup an image as linked content, you will need to have the placeholder image in the folder Content:\images instead of just Content:\. If this is not setup correctly, the player will not be able to find the media. The same is true if your Remote Publish Location places media *In a folder named after the Publish Location*.

Keep in mind of the bandwidth considerations when marking one or more media items as non-scheduled content. Especially if you are sending non-scheduled content to all your channels. You can very easily overwhelm you existing infrastructure if, for instance, you have 10 channels with 10 players on each channel and you mark a video file that is 1

GB in size as non-scheduled content. Be aware in this case that Content Manager will have to upload 100 GB of data (even though each player will only download 1 GB).

Preloading Content on Players

InfoChannel Players support the notion of pre-loaded content. This allows you to pre-install content on the Player systems before putting them in the field, to optimize away the need for the player to download any content when the player connects to Content Manager.

Note that any pre-installed content is not available for use until you add it to the plan (you must put it in a playlist or mark it as Non-Scheduled Content).

When the player goes to download a given file from InfoChannel Content Manager, it first checks for an exact match in the PreLoadedContent folder. If found, the pre-loaded copy is used, and the download is skipped.

By default, this folder on the player is:

... \All Users\Application Data\Scala\InfoChannel Player 5\ Network\PreLoadedContent

The default folder can be overridden with the PreLoadedContent MMOS.INI keyword. For example:

PreLoadedContent = "C:\MyPreLoadedContent"

For example you can place a file BigVideo.mpg in this folder. If the player's plan requires a file called BigVideo.mpg, and the MD5 signature of the preloaded version matches the MD5 signature of the version needed by the plan, the preloaded copy will get used, skipping the download.

Configuring HTTPS

InfoChannel Content Manager 5 supports HTTPS. To configure HTTPS, follow the instructions below.

Generate a certificate

A self-signed certificate must be generated. The Sun Java Development Kit (JDK) and Java Runtime Environment (JRE) distributions includes the application *keytool.exe* that creates a certificate. The keytool application is located in the bin directory of either the JDK or JRE installation. The *keytool.exe* application exists in the JRE bin directory that Content Manager installs (JRE 1.5_06). Your installed JRE or JDK bin directory might differ, so you would need to modify it to reflect that difference.

To generate a certificate, open a command line and navigate to this folder:

C:\Program Files\Java\jre1.5.0_06\bin

and execute this command:

keytool -genkey -alias cm -keyalg "RSA" -keystore "C:\Documents And Settings\All Users\Application Data\Scala\InfoChannel Content Manager 5\Conf\tomcat.keystore"

This will create a password protected keystore and add the self signed certificate to it. The keytool will prompt you for information about the certificate:

Enter keystore password: – Enter the password that will protect the keystore.

What is your first and last name? - Enter the URL you'll use when accessing the Content Manager over HTTPS. For example:

www.yourdomain.com

What is the name of your organizational unit? - Enter your department name. For example - Engineering

What is the name of your organization? - Enter the name of the organization. For example - Scala, Inc.

What is the name of your City or Locality? - Enter the city or locality in which you reside. For example - Exton.

What is the name of your State or Province? - Enter the state or province in which you reside. For example - Pennsylvania.

What is the two-letter country code for this unit? - Enter the two letter country code in which you reside. For example, the United States of America is: US

In order to make Designer publish to Content Manager using HTTPS, you have to have a signed certificate. But first, you have to generate a certificate signing request.

Generate a Certificate Signing Request

To generate a Certificate Signing Request open the command prompt and navigate to this folder:

C:\Program Files\Java\jre1.5.0_06\bin

The keytool.exe application exists in the JRE bin directory that Content Manager installs (JRE 1.5_06). Your installed JRE or JDK bin directory might differ, so you would need to modify it to reflect that difference.

and type:

keytool -certreq -keyalg "RSA" -alias cm -file "C:\cm_certreq.csr" -keystore "C:\Documents And Settings\All Users\Application Data\Scala\InfoChannel Content Manager 5\Conf\Conf\tomcat.keystore"

This action will prompt you to enter the keystore password

before a certificate signing request file is generated. Once generated, you can then send the file:

C:\cm_certreq.csr

to a Certificate Authority that will create a signed certificate for you.

Installing the Certificate

When you receive the signed certificate from your Certificate Authority it must be installed into the keystore. The Certificate Authority should provide instructions for this procedure, but below is some general information that might help.

First, you must download the Chain Certificate or Root Certificate from your Certificate Authority, and import it into the keystore. To do this, open a command prompt and navigate to this folder:

C:\Program Files\Java\jre1.5.0_06\bin

The keytool.exe application exists in the JRE bin directory that Content Manager installs (JRE 1.5_06). Your installed JRE or JDK bin directory might differ, so you would need to modify it to reflect that difference.

and type this command:

keytool -import -alias root -file "CHAIN_CERTIFICATE_PATH" -keystore "C:\Documents And Settings\All Users\Application Data\Scala\InfoChannel Content Manager 5\Conf\Conf\tomcat.keystore" -trustcacerts

The CHAIN_CERTIFICATE_PATH is the full path to the Chain Certificate that you downloaded from your Certificate Authority.

For PKCS#7 formatted certificate replies, the supporting certificate chain is included in the certificate, so you don't have to install the Chain or Root certificate.

To import your new Certificate:

keytool -import -alias root -file "YOUR_CERTIFICATE_PATH" -keystore "C:\Documents And Settings\All Users\Application Data\Scala\InfoChannel Content Manager 5\Conf\Conf\tomcat.keystore" –trustcacerts

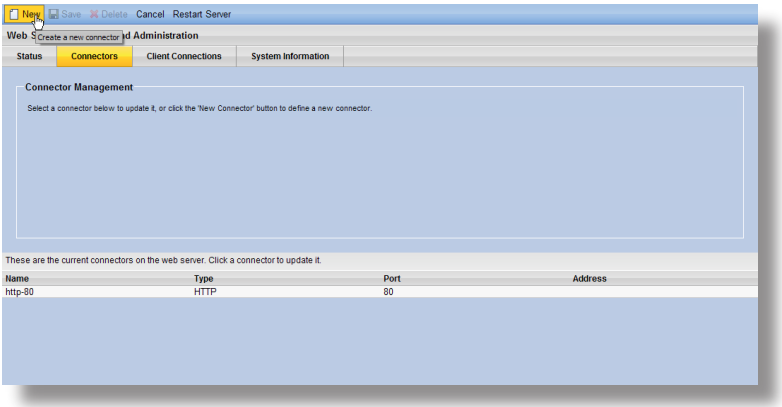
Where YOUR_CERTIFICATE_PATH is the full path to the Certificate that you downloaded.

For more information about these processes, go to:

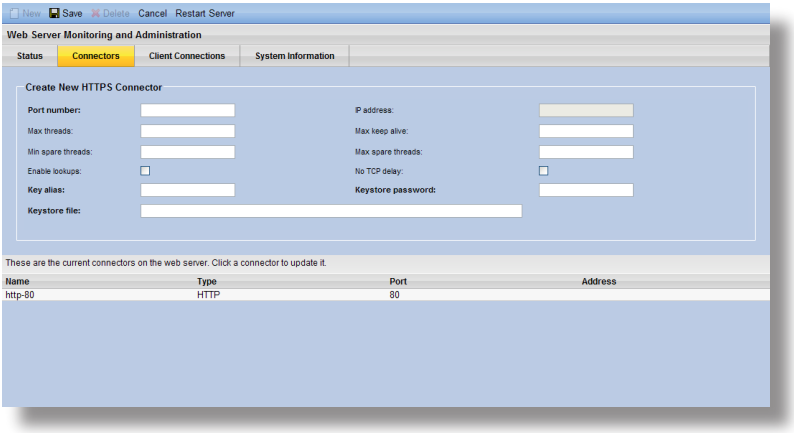
http://java.sun.com/j2se/1.5.0/docs/tooldocs/solaris/keytool.html

Creating a HTTPS Connector

Once a Certificate has been obtained and installed, you need to create a new HTTPS connector. Go to *Settings -> Server Settings* and click on the *Connectors* tab. Then click the *New* button to create a new connector:



Select *HTTPS* from the *Select Connector Type:* drop down menu. You see this form:



When you add a new HTTPS connector, there are a number of options that can be set:

Port number - The port number the connector will bind to. You can only bind one connector to each port on each IP address. For HTTPS this is usually port 443.

IP address - This setting currently cannot be changed.

Max threads - (Optional) Enter the maximum number of concurrent threads this connector can use. The connector will not be able to serve more simultaneous requests than it has threads. The default vale is 150. You should set this based on how many player are directly connected to Content Manager. To ensure stable content delivery this value should be set to about 4/3 the number of connected players. Specifying a value of more than 1000 has little effect on Windows 32-bit operating systems, because there is a limit to the number of threads available to each process. Windows operating systems that have 64-bit support can use more than 1000 threads.

Max keep alive - (Optional) Enter the maximum number of requests that can be kept alive waiting for subsequent

requests on this connector. The default is 100, and a value of 1 disables this setting. Generally Scala recommends disabling this setting on networks with more than 50 players.

Min spare threads - (Optional) Enter the minimum number of spare threads for the thread pool on this connector. This setting is the number of threads that are available to serve requests when they arrive. The default value is 4. If your network contains more than 50 players, this setting should be set to 25.

Max spare threads - (Optional) Enter the maximum number of spare threads for the thread pool on this connector. This setting is the maximum number of idle threads that can live in the pool before the server begins to close them. The default value is 50. If your network contains more than 50 players, this setting should be set to 100.

Enable lookups - (Optional) If enabled, Tomcat wil attempt to resolve the hostnames of clients (such as players). Enabling this setting can negatively affect performance.

No TCP delay - (Optional) If enabled, this setting generally improves performance.

Key alias - Enter the alias of the certificate in the keystore that Tomcat uses for the connector. If not specified, the first key read from the keystore will be used. Note: You must use the same *key alias* that you specified when you generated your self-signed certificate.

Key password - Enter the password Tomcat will use when retrieving the certificate from the keystore. The default value is *changeit*. Note: You must use the same *key password* that you specified when you generated your self-signed certificate.

Keystore file - Enter the full path of the keystore file (that

contains the certificate Tomcat should use) for this connector. If not specified, the connector will use a file named *.keystore* in the user's home directory. Note: If you followed the instructions for generating a self-signed certificate this path is:

C:\Documents And Settings\All Users\Application Data\Scala\InfoChannel Content Manager 5\Conf\Conf\tomcat.keystore

Once the appropriate values have been set, click the *Save* button.

Configuring HTTPS Client Connections

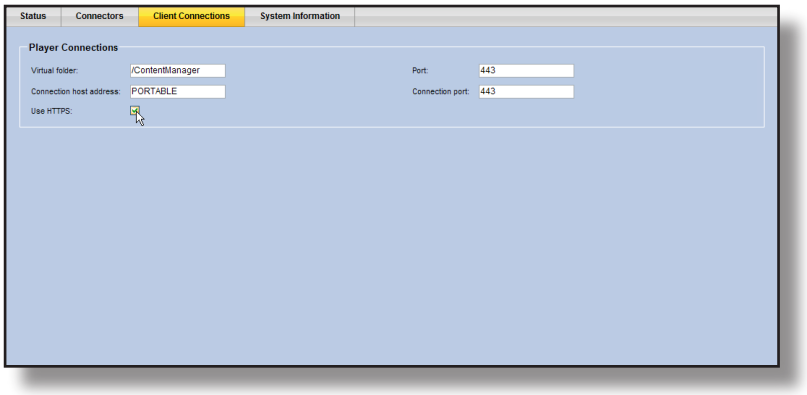
Once the HTTPS connector has been configured, you should configure the client connections to use the HTTPS connector.

Go to *Settings* -> *Server Settings* and click the *Client Connections* tab.

Change the *Port:* value. Typically this is the same value you specified for the HTTPS connector *Port number* setting.

If Content Manager traffic is not being port forwarded, the *Connection port*: should match the Port: setting. Otherwise use a value your IT administrator suggests.

Then enable the *Use HTTPS:* setting.



Save your settings by clicking the *Save* button.

Click the *Restart Server* button to use your new HTTPS configuration.

5 Scala InfoChannel Content Manager 5 Backup and Restore Instructions

This chapter describes how to backup and restore Scala InfoChannel Content Manager 5. Databases currently supported are:

- PostgreSQL 8.1.x
- MySQL 4.1 or 5.0
- Microsoft SQL Server 2000
- Microsoft SQL Server 2005

Content Manager does not contain an automated backup/restore feature, so these instructions comprise a set of manual steps. These steps could be automated, but are beyond the scope of this document.

The backup process assumes that you have copied or archived the necessary files from the Content Manager system to another location. Likewise, the restore process relies on either copying or extracting the files from the backup location to the original location.

Scala does not make recommendations as to where your backup files should reside. However, it is assumed good backup principles are followed.

Backup Content Manager's data

Follow the five steps outlined below:

Step 1: Stopping Apache Tomcat and InfoChannel Transmission Server services

Since the backup process is not an integrated part of Content Manager, the Apache Tomcat and InfoChannel Transmission

Server services have to be stopped first.

Go to *Start -> Control Panel* then double-click on *Administrative Tools*. Double-click on *Services*, then find the *Apache Tomcat* service. Right-click and select *Stop*. Wait for the service to stop completely. Find the *Scala InfoChannel Transmission Server* service. Right-click and select *Stop*. Wait for the service to stop completely before moving to the next step.

Step 2: Backing up the data files

All data files must be backed up. By default, the location of this directory is:

C:\Documents and Settings\All Users\Application data\Scala\ InfoChannel Content Manager 5\Data

If your data location differs the one listed above, you can find the location in Content Manager under *Settings-> Server Settings -> System Paths* frame-> *Data root*.

You should backup all files, folders and subfolders from this directory *except* the folder ***WEB-INF***.

Step 3: Backing up the configuration files

The following configuration files must be backed up. By default, the location of this directory is:

C:\Documents and Settings\All Users\Application data\Scala\ InfoChannel Content Manager 5

You must backup these files and folders/subfolder within:

- *Conf* – All files and subfolders
- *License* – All files and subfolders
- *Logs* – Not necessary, but you might want to keep the log files
- *SavedValues* – All files and subfolders

- *license.xml* – The license file

Note: *The default location of the data files exists in the same location as the configuration files. So if you are using the InfoChannel Content Manager 5 installation default values, you can combine step 1 and step 2.*

You must also backup the configuration files for the InfoChannel Transmission Server. By default, the location of this directory is:

C:\Documents and Settings\All Users\Application data\Scala\ InfoChannel Transmission Server 5

All files and subfolders should be backed up.

Step 4: Backing up the database

Depending on the type of database server you are using, a different set of instructions are required in order to backup the InfoChannel Content Manager 5 database. You should only read and follow the instructions for the type of database you are using.

PostgreSQL

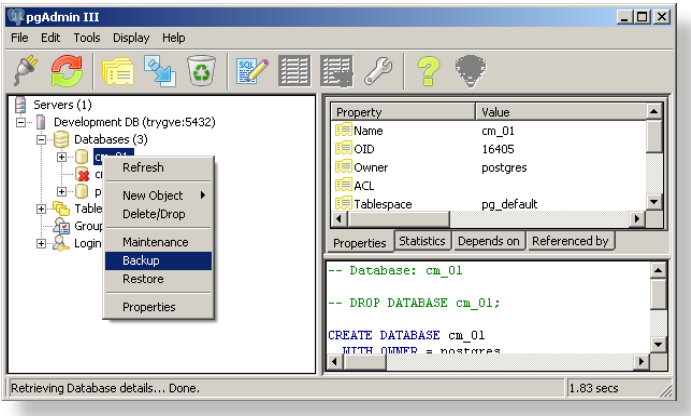
Backing up the PostgreSQL database is performed by either using the *pgAdmin* tool or the command line tool *pg_dump.exe*. A detailed explanation of the procedure using the *pgAdmin* tool follows as well as a short example of *pg_dump.exe* usage. The following steps illustrate the step-by-step process of performing a backup of a PostgreSQL database schema *cm_01*.

Note: *There is a significant performance increase in running pgAdmin from the same computer that the PostgreSQL database server is running on.*

1. Select database schema to backup

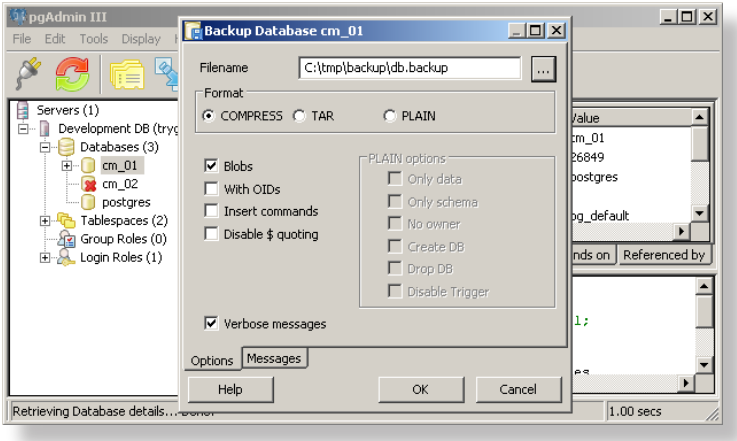
   Open pgAdmin by navigating to *Start -> Programs -> PostgresSQL 8.1 -> pgAdmin*. Connect to your database server using the same Username and Password you entered when you installed InfoChannel Content Manager 5. Select the database schema you want to backup, then right-click

and select *Backup*.



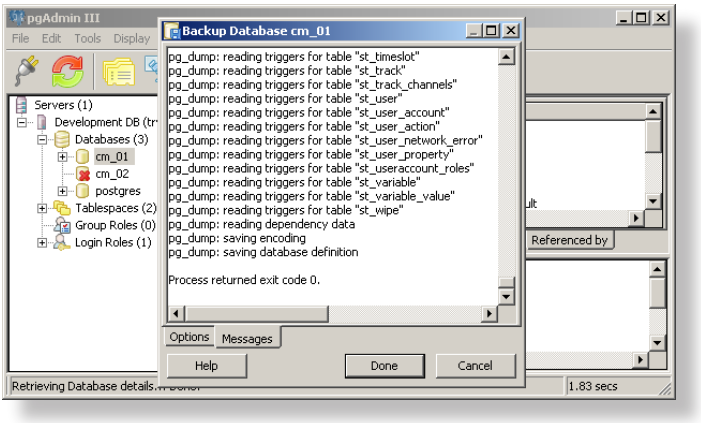
2. Set the backup options

   In the *backup* dialog, choose a path and filename for the backup file, and press *OK* to start the backup.



3. Verify the result

   Wait for the backup process to finish, and verify that the final message is *Process returned exit code 0*. If the exit code is different, this means that the backup was not successful.



Using command line

You may choose to use the command line tool *pg_dump.exe* to backup the database. To create the same backup as shown above, execute the following command:

```
pg_dump --format=custom --compress=5 -U postgres -W cm_
01 > C:\tmp\backup\db.backup
```

Please refer to the PostgreSQL manual for more details when using the command line tools.

MySQL

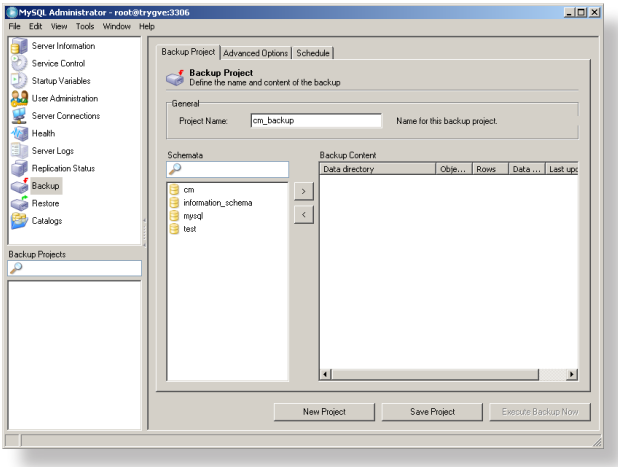
A backup of the MySQL database can be done either through the MySQL Administrator interface or using the command line tool *mysqldump.exe*. Detailed instructions on how to use MySQL Administrator are provided here, as well as a short example of *mysqldump.exe* usage.

> **Note**: *A backup created using MySQL Administrator cannot be restored using mysqldump and visa-versa.*

The following steps illustrate the step-by-step process of performing a backup of a MySQL database schema *cm*.

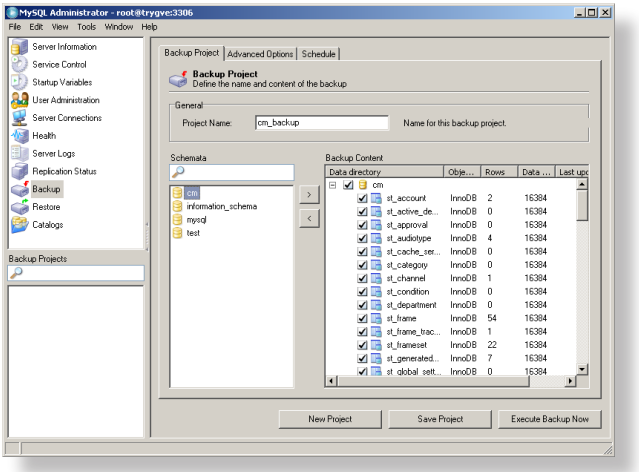
1. Create the backup project

Connect to your MySQL database server and select *Backup* from the left menu. Then click *New Project*, and give the project a name.



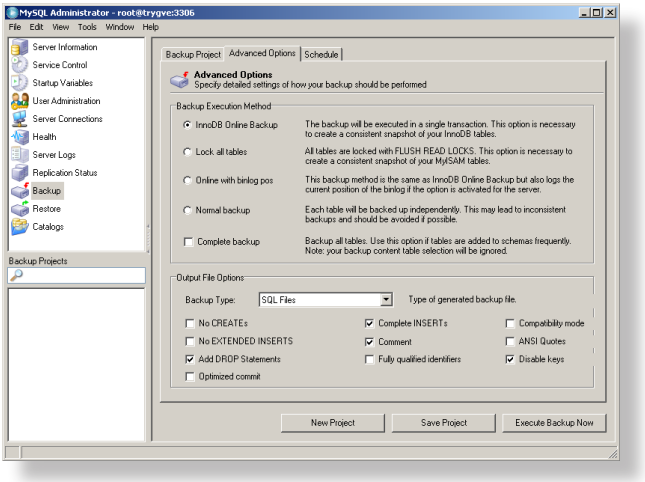
2. Select the database schema

   Select the cm database schema, and click the > button to select the contents of the schema. All tables should be selected.



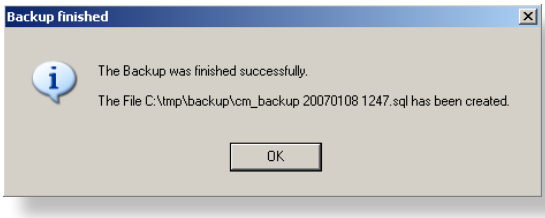
3. Check the options and execute backup

   The *Backup Execution Method* must be set to ***InnoDB Online Backup***. Scala recommends that the other options remain unchanged.


MySQL Administrator - root@trygve:3306
File Edit View Tools Window Help
Server Information
Service Control
Startup Variables
User Administration
Server Connections
Health
Server Logs
Replication Status
Backup
Restore
Catalogs
Backup Projects
Backup Project
Advanced Options
Schedule
Advanced Options
Specify detailed settings of how your backup should be performed
Backup Execution Method
InnoDB Online Backup
The backup will be executed in a single transaction. This option is necessary to create a consistent snapshot of your InnoDB tables.
Lock all tables
All tables are locked with FLUSH READ LOCKS. This option is necessary to create a consistent snapshot of your MyISAM tables.
Online with binlog pos
This backup method is the same as InnoDB Online Backup but also logs the current position of the binlog if the option is activated for the server.
Normal backup
Each table will be backed up independently. This may lead to inconsistent backups and should be avoided if possible.
Complete backup
Backup all tables. Use this option if tables are added to schemas frequently. Note: your backup content table selection will be ignored.
Output File Options
Backup Type:
SQL Files
Type of generated backup file.
No CREATEs
Complete INSERTs
Compatibility mode
No EXTENDED INSERTS
Comment
ANSI Quotes
Add DROP Statements
Fully qualified identifiers
Disable keys
Optimized commit
New Project
Save Project
Execute Backup Now

4. Execute the backup and verify the results

   Click the *Execute Backup Now* button, and verify that the backup completed successfully:


Backup finished
The Backup was finished successfully.
The File C:\tmp\backup\cm_backup 20070108 1247.sql has been created.
OK

Using command line

You may choose to use the command line tool *mysqldump.exe* to backup the database. To create the same backup as shown above, execute the following command:

```
mysqldump -u root -p cm > C:\tmp\backup\cm_backup.sql
```

Please refer to the MySQL manual for more details for the command-line tools.

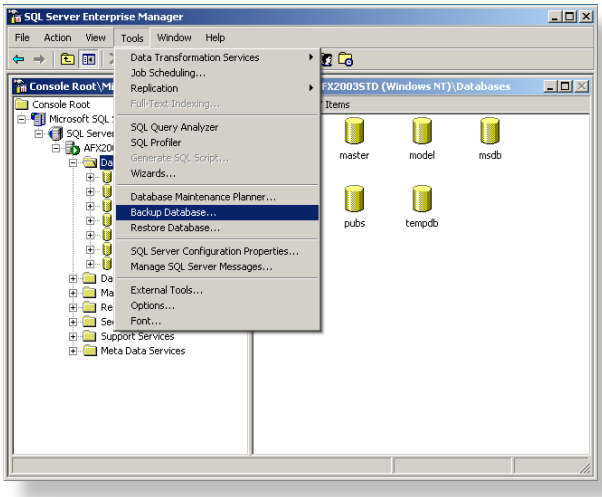
Microsoft SQL Server 2000

A backup of the Microsoft SQL Server 2000 can be performed using the Microsoft SQL Server Enterprise Manager. There are many different types of backup tools available for Microsoft SQL Server 2000. However, this guide only demonstrates how to create a single complete backup. If your networked database uses Microsoft SQL Server 2000, you are likely to use a more sophisticated (incremental) backup policy. Please consult the Microsoft SQL Server 2000 documentation or your database administrator for more information.

The following steps illustrate the step-by-step process of performing a backup of a Microsoft SQL Server 2000 database schema *cm*.

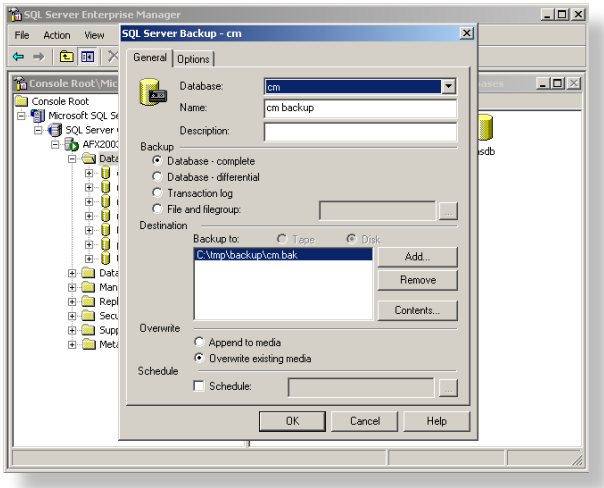
1. Create the backup project

   Connect to your database server using the Microsoft SQL Server Enterprise Manager, and start the *Backup Database* wizard.



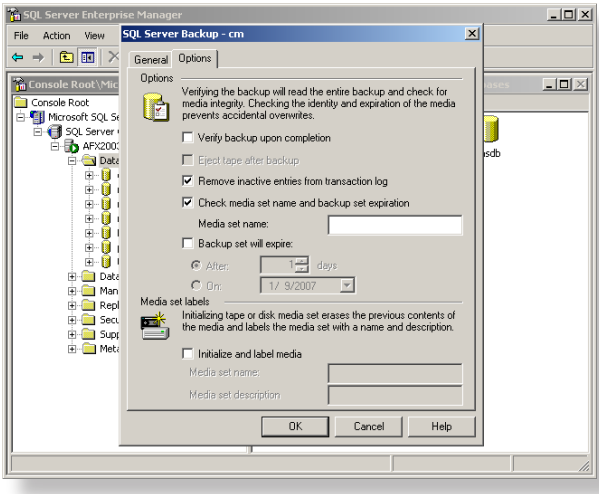
2. Select the database and the backup destination

   Select the database you want to backup, and add at least one destination for the backup. Set the *Overwrite* option to *Overwrite existing media*, if you don't want to keep previous backups. Also make sure the *Backup* option is set to *Database – complete* to ensure a complete backup is performed.



3. Check settings and execute backup

   Scala recommends that the default options remain unchanged. Execute the backup by pressing the *OK* button, and verify that the backup process completed successfully.


SQL Server Enterprise Manager
File Action View
SQL Server Backup - cm
General Options
Options
Verifying the backup will read the entire backup and check for media integrity. Checking the identity and expiration of the media prevents accidental overwrites.
Verify backup upon completion
Eject tape after backup
Remove inactive entries from transaction log
Check media set name and backup set expiration
Media set name:
Backup set will expire:
After: days
On: 1/ 9/2007
Media set labels
Initializing tape or disk media set erases the previous contents of the media and labels the media set with a name and description.
Initialize and label media
Media set name:
Media set description:
OK
Cancel
Help

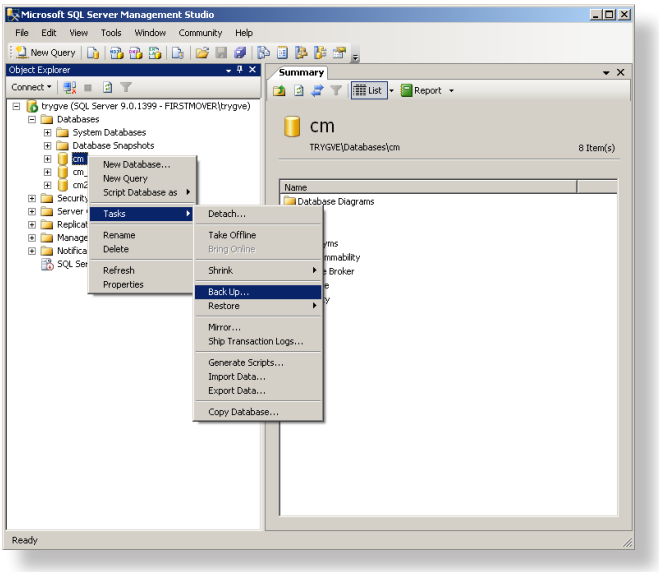
Microsoft SQL Server 2005

A backup of the Microsoft SQL Server 2005 can be performed using the Microsoft SQL Server Management Studio. There are many different types of backup tools available for Microsoft SQL Server 2005. However, this guide only demonstrates how to create a single complete backup. If your networked database uses Microsoft SQL Server 2005, you are likely to use a more sophisticated (incremental) backup policy. Please consult the Microsoft SQL Server 2005 documentation or your database administrator for more information.

The following steps illustrate the step-by-step process of performing a backup of a Microsoft SQL Server 2005 database schema *cm*.

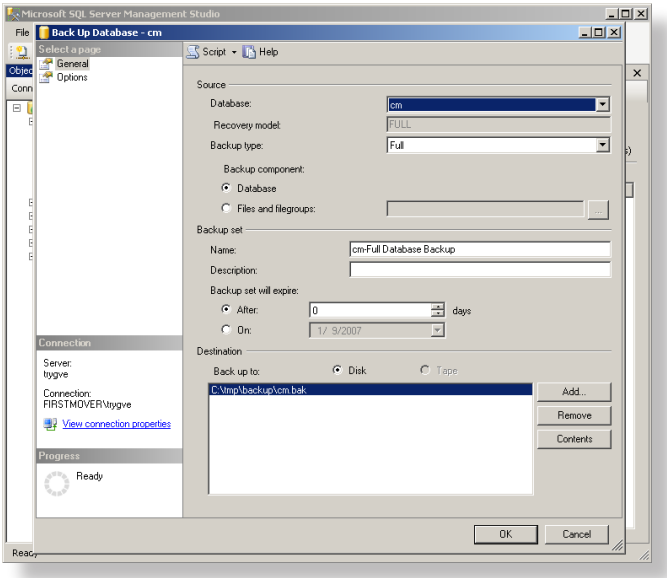
1. Select the database schema to backup

   Connect to your database server using Microsoft SQL Server Management Studio, and select the database you want to backup. Choose *Back Up* as shown below.



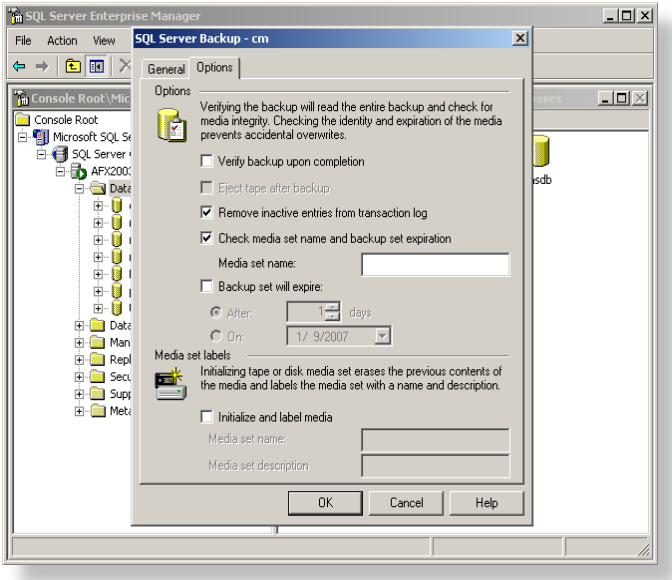
2. Select the backup destination

   Choose one or more destinations for the backup. Scala recommends that the other options remain unchanged.



3. Check settings

   On the *Options* page, select *Overwrite all existing backup sets* if you want to overwrite old backups. Scala recommends that the other options remain unchanged.


SQL Server Enterprise Manager
File Action View
SQL Server Backup - cm
General Options
Options
Verifying the backup will read the entire backup and check for media integrity. Checking the identity and expiration of the media prevents accidental overwrites.
Verify backup upon completion
Eject tape after backup
Remove inactive entries from transaction log
Check media set name and backup set expiration
Media set name:
Backup set will expire:
After: 1 days
On: 1/ 9/2007
Media set labels
Initializing tape or disk media set erases the previous contents of the media and labels the media set with a name and description.
Initialize and label media
Media set name:
Media set description:
OK
Cancel
Help
Console Root
Microsoft SQL Se
SQL Server
AFX2003
Data
Man
Repl
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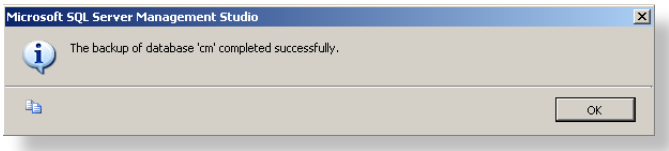
Supp
Meta

4. Execute and Verify backup

   Press the *OK* button to start the backup. If the backup was successful you will see this message.



Step 5 – Start Apache Tomcat and InfoChannel Transmission Server services

The backup process is now complete. You can start Apache Tomcat and Scala InfoChannel Transmission Server services.

Go to *Start -> Control Panel* then double-click on *Administrative Tools*. Double-click on *Services*, then find the *Apache Tomcat* service. Right-click and select *Start*. Wait for the service to

start completely. Find the *Scala InfoChannel Transmission Server* service. Right-click and select *Start*. Wait for the service to start completely.

You can now access InfoChannel Content Manager 5.

Restoring Content Manager's data

By following the steps below, you can restore your InfoChannel Content Manager data 5 from a backup. There are many reasons for performing a restore. For example: you are recovering from a system crash (data loss) or reverting changes to the data.

Step 1: Perform a new install

If you're restoring to a system that already has InfoChannel Content Manager 5 installed, you must uninstall it first. Then you must delete its data and configuration files directories. You will also have to delete the configuration files directory for the InfoChannel Transmission Server.

Once completed, install the version of InfoChannel Content Manager that matches the one you have backup data for. At the end of the installation the installer will automatically open the welcome page in the browser for you. **DO NOT** configure Content Manager! Instead, close the browser.

Step 2: Stop Apache Tomcat and InfoChannel Transmission Server services

The installer automatically starts Apache Tomcat and the Scala InfoChannel Transmission Server services, so you must stop them before proceeding with the restore process.

Go to *Start -> Control Panel* then double-click on *Administrative Tools*. Double-click on *Services*, then find the *Apache Tomcat* service. Right-click and select *Stop*. Wait for the service to stop completely. Find the *Scala InfoChannel Transmission Server* service. Right-click and select *Stop*. Wait for the service to stop

completely before moving to the next step.

Step 3: Restore the data files

Restore the data files from the backup location to the data files directory. There should only be one folder, *WEB-INF,* in the data directory prior to restoring.

Step 4: Restore the configuration files

Restore the configuration files from the backup location to the configuration files directory. Some files are automatically created when Apache Tomcat was started by the installer, and must be overwritten when restoring.

You must also restore the Transmission Server configuration files. When restoring these files, existing files must be overwritten.

Step 5: Restore the database

Depending on the type of database server you are using, a different set of instructions are required in order to restore the InfoChannel Content Manager 5 database. You should only read and follow the instructions for the type of database you are using.

PostgreSQL

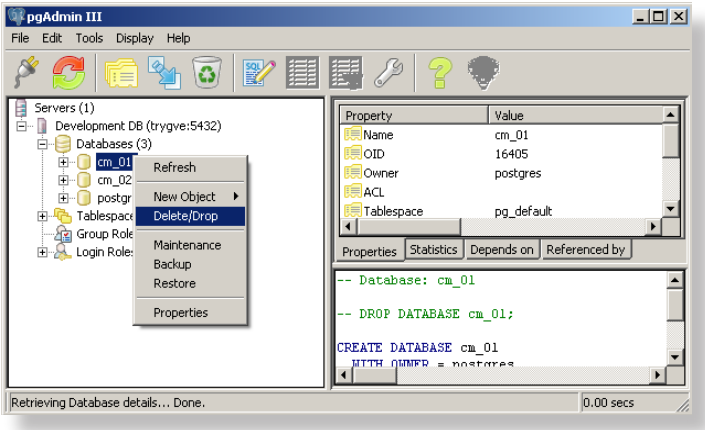
As with the backup process, pgAdmin is used to restore the database.

1. Delete existing database schema

   If the database schema you're restoring already exists, you must first delete it.

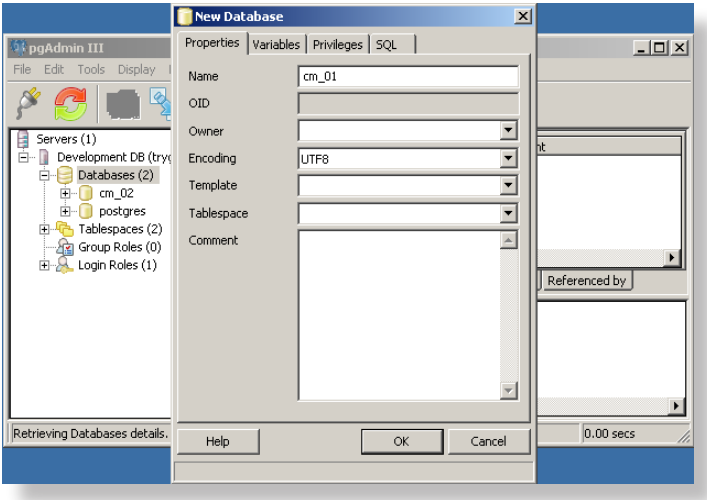
   Open pgAdmin by navigating to *Start -> Programs -> PostgresSQL 8.1 -> pgAdmin*. Connect to your database server using the same Username and Password you entered

when you installed InfoChannel Content Manager 5. Select the database schema you want to delete, then right-click and select *Delete/Drop*. In the *Drop Database?* dialog, click *Yes*.



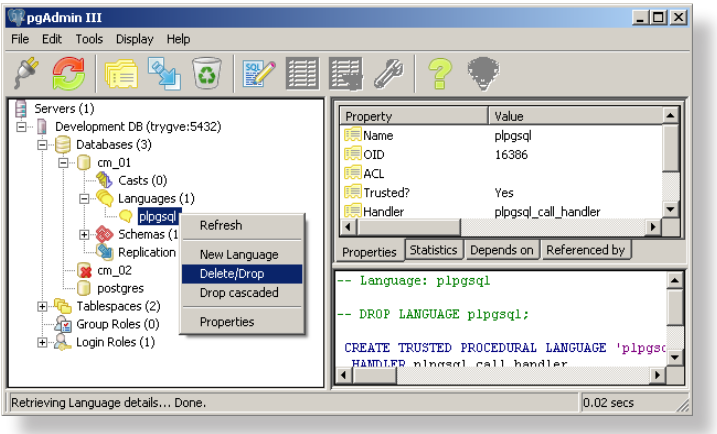
2. Create an empty database schema

   Select *Databases*, then click *Edit -> New Object -> New Database*. Type the database schema name you want to restore. Make sure the encoding is set to *UTF-8*. Click *OK*.



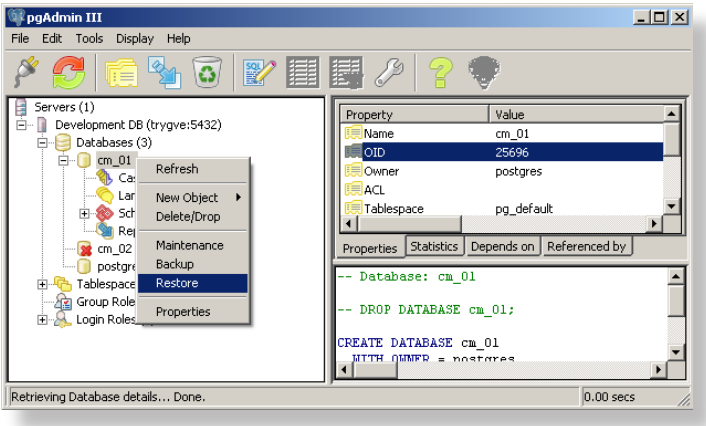
3. Delete the plpgsql language

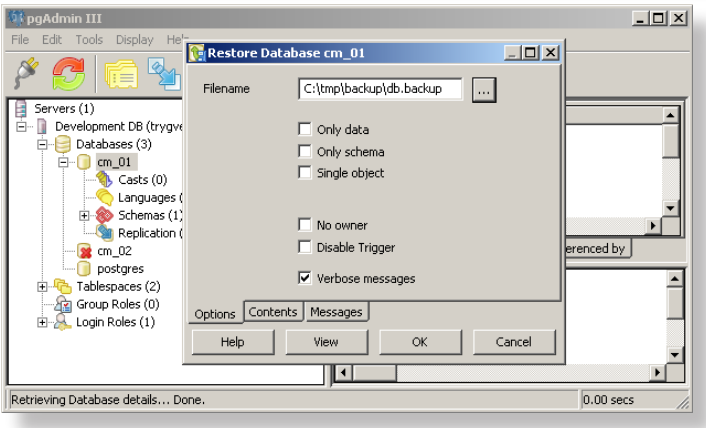
   The *plpgsql* language must be deleted. Select the database you just created, and expand it. Then expand the *Languages* entry. Select *plpgsql* then right click and select *Delete/Drop*. In the *Drop Language*? dialog, click *Yes*.



4. Restore the database tables and data

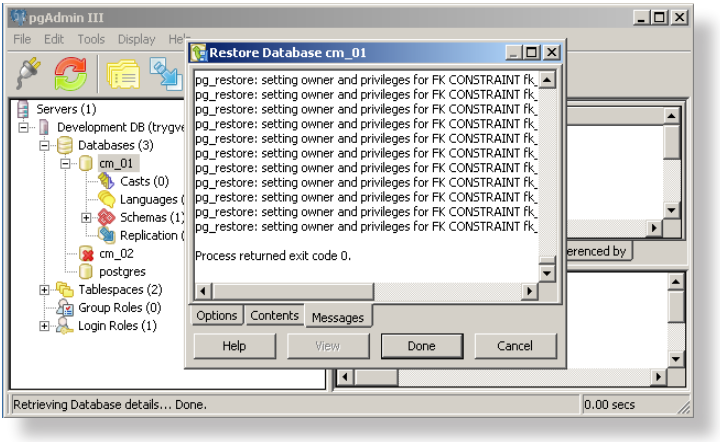
   You can now restore the tables and data. Select the database, right click, and choose *Restore*. In the resulting dialog box, choose the database backup file that was created. If you backed up the database using specific options, you must change the restore options accordingly. Otherwise the defaults are okay.





5. Verify the result

Wait for the restore process to finish, and verify that the final message is *Process returned exit code 0*. If a different exit code is shown, it indicates that some part of the restore process has failed.



Using command line

You may choose to use the command line tool *pg_restore.exe* to restore the database. To restore a backup, execute the following command:

```
pg_restore --dbname=cm_01 --format=custom -U postgres -W
C:\tmp\db.backup
```

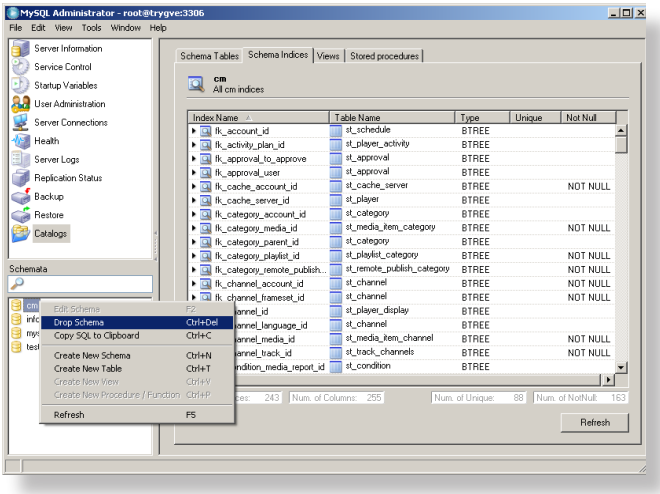
Please refer to the PostgreSQL manual for more details on the command line tools.

MySQL

If you are using the MySQL database, you must follow these steps to restore your backup. Like the backup process, restoring the database also uses MySQL Administrator.

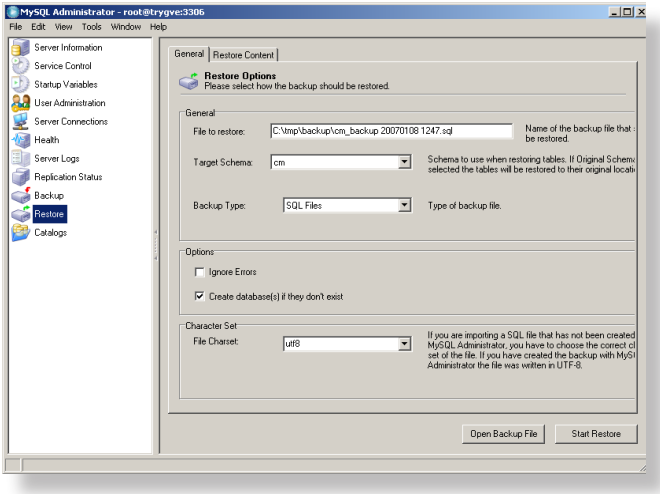
1. Drop existing schema

   If the schema you are restoring already exists, it must be dropped first.



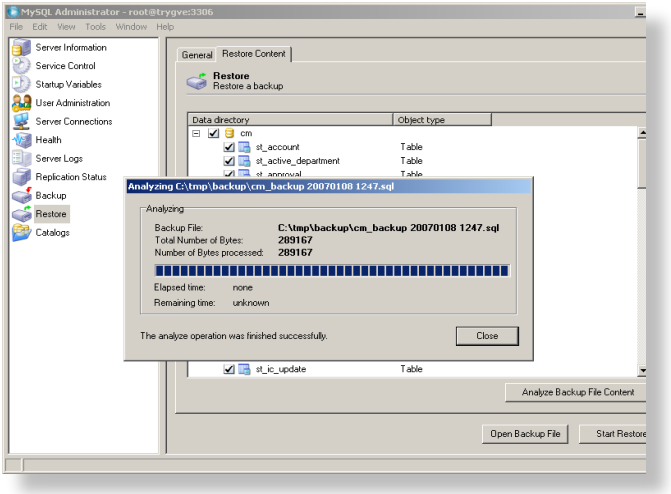
2. Open the backup file and select the schema

   Open the backup file you want to restore from by choosing *Restore* from the left menu, and clicking the *Open Backup File* button. Select the target schema or use the original schema, and check *Create database(s) if they don't exist*.



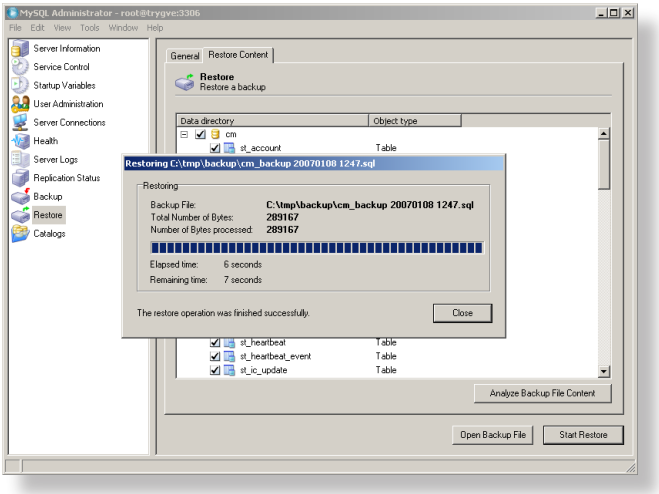
3. Select content to restore

   The backup file must be analyzed before its contents can be restored. Click the *Restore Content* tab, then *Analyze Backup File Content* button to perform this operation. Verify that the backup file was successfully analyzed. All tables should be selected for restore.



4. Start restore and verify result

   You are now ready to start the restore process. Click the *Start Restore* button to begin. When finished, verify that the restore completed successfully.



Using command line

You may choose to use the command line tool *mysql.exe* to restore the database. To restore a backup, execute the following command:

```
mysql -u root -p cm < C:\tmp\backup\cm_backup.sql
```

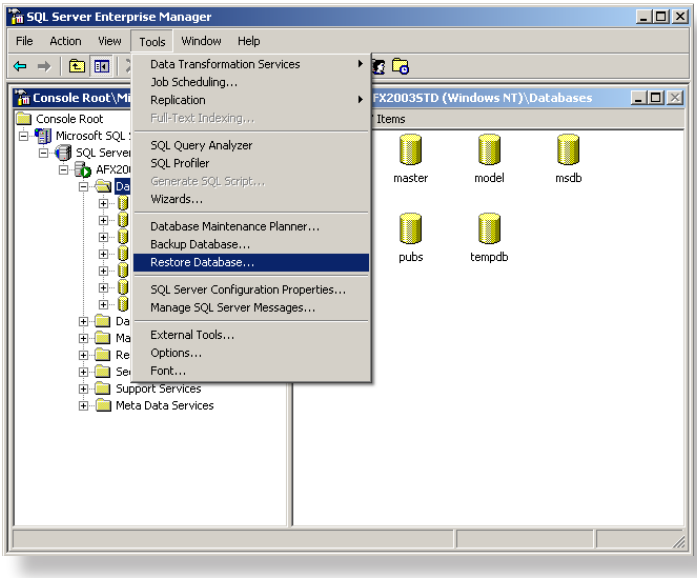
Please refer to the MySQL manual for more details on the command line tools.

Microsoft SQL Server 2000

If you are using the Microsoft SQL Server 2000 database, you must follow these steps to restore your backup. Like the backup process, restoring the database also uses Microsoft SQL Server Enterprise Manager.

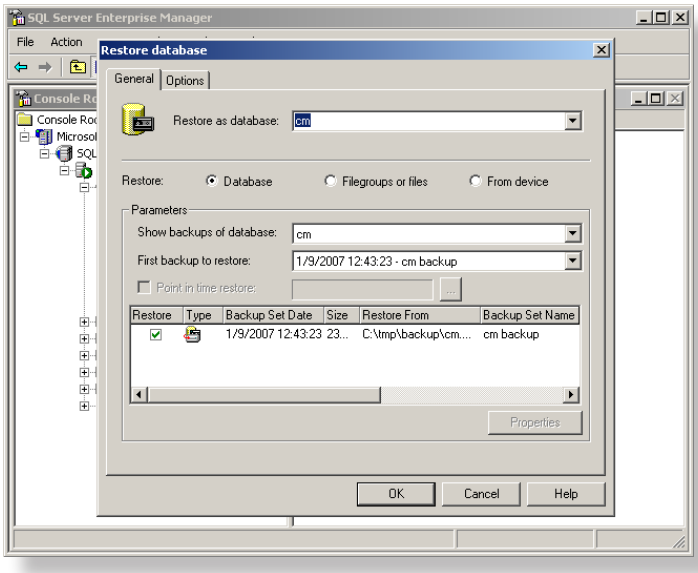
1. Start restore process

   Using Microsoft SQL Server Enterprise Manager, select the database you want to restore, and click *Tools -> Restore Database…*



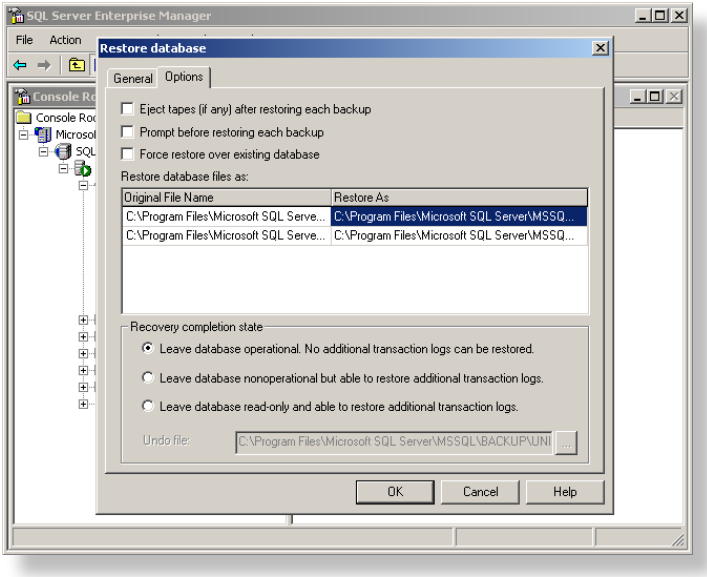
2. Select backup destination and source

   Select or type the name of the database you want to restore, then select the source to restore from.



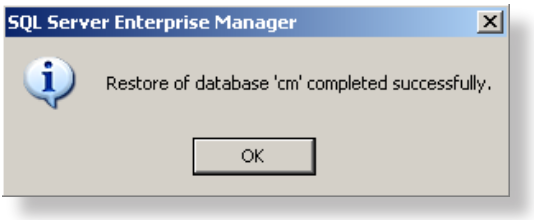
3. Check options and execute restore

   Click the *Options* tab. Scala recommends that the default options remain unchanged. Once chosen, click *OK*.



4. Verify results

   If the restore process is successful, you will see this dialog:

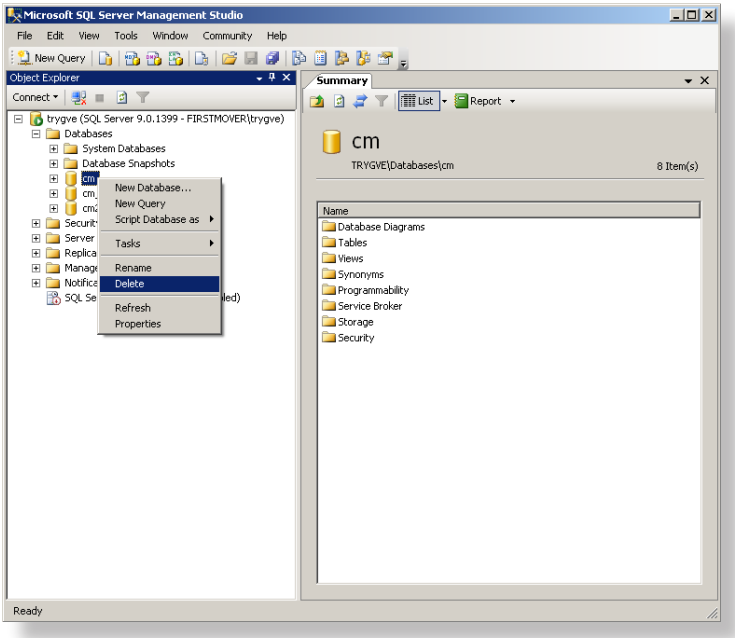


Microsoft SQL Server 2005

If you are using the Microsoft SQL Server 2005 database, you must follow these steps to restore your backup. Like the backup process, restoring the database also uses Microsoft SQL Server Management Studio.

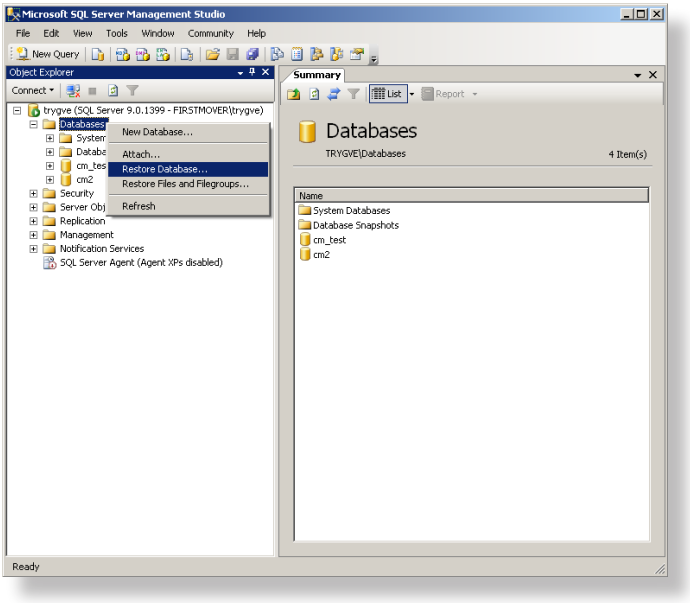
1. Step 1 – Delete existing database

   Using Microsoft SQL Server Management Studio, delete the existing database you want to restore to. **DO NOT** delete the backup and restore history information for the database.



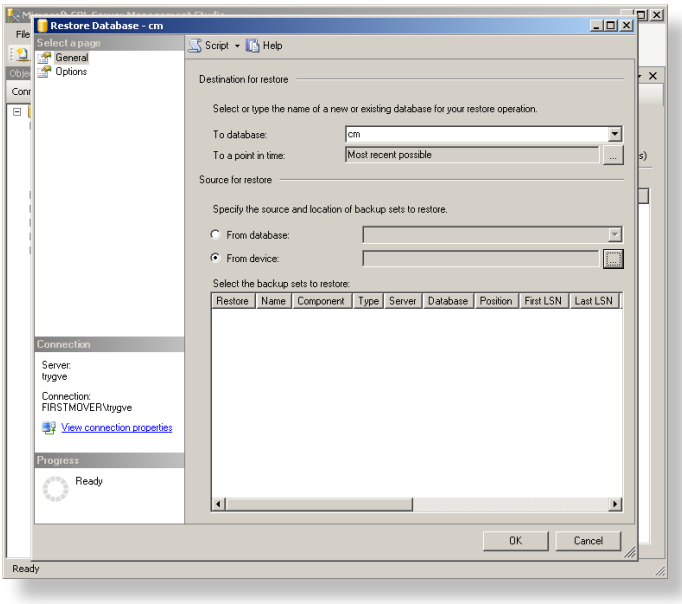
2. Start restore program

   Now start the restore process by right clicking the *Databases* element.



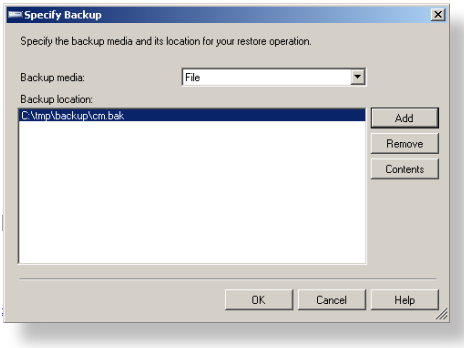
3. Select restore destination and source

   Type the name of the database you want to restore. Select the *From device* radio button and click the "..." button.

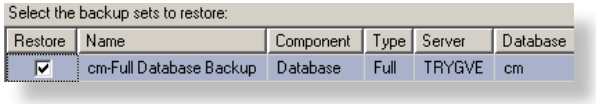


4. Add restore source

   Add the backup file you want to restore from to the list of backup locations, and click *OK*.

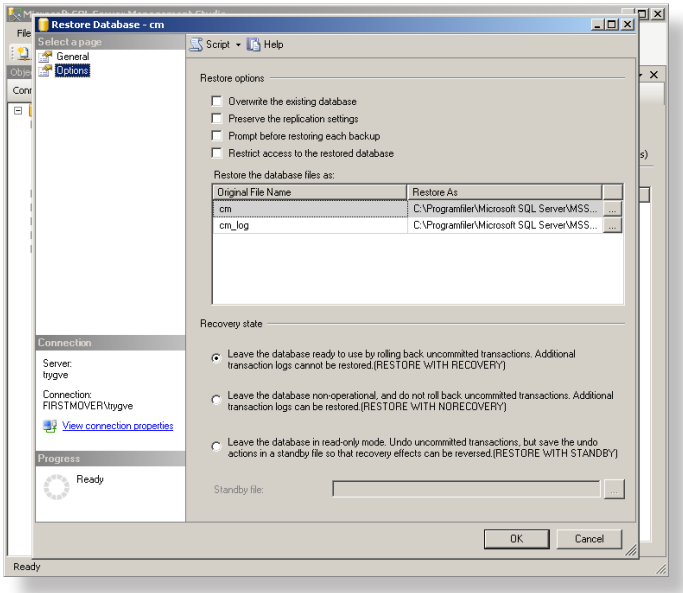


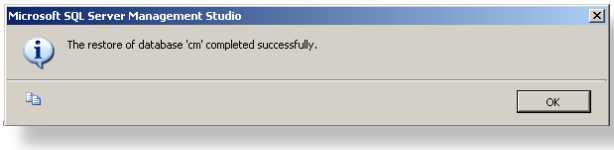
Make sure to select the *Restore* checkbox after adding the file:



5. Check options and execute restore

   Scala recommends that the default options remain unchanged. Click the *OK* button to start the restore process. Once complete, verify that the restore was successful.





Step 6: Start Apache Tomcat and InfoChannel Transmission Server services

The restore process is now complete. You can start Apache Tomcat and InfoChannel Transmission Server services.

Go to *Start -> Control Panel* then double-click on *Administrative Tools*. Double-click on *Services*, then find the *Apache Tomcat* service. Right-click and select *Start*. Wait for the service to start completely. Find the *Scala InfoChannel Transmission Server* service. Right-click and select *Start*. Wait for the service to start completely.

You can now access InfoChannel Content Manager 5.